TRANSPORTATION AND ENVIRONMENTAL INFRASTRUCTURE NEEDS

(103–62)

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RINGS

ORE THE

MMITTEE ON
INVESTIGATIONS AND OVERSIGHT

OF THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

SECOND SESSION

MARCH 15, 1994
(Transportation Infrastructure)
APRIL 21, 1994
(Highway, Bridge, and Transit Infrastructure Needs)
APRIL 28, 1994
(Aviation Infrastructure Needs)
MAY 4, 1994
(Ports, Inland Waterways, Wastewater Treatment, and Water Supply Infrastructure)
JULY 13, 1994
(Infrastructure Financing)

Printed for the use of the
Committee on Public Works and Transportation

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(202) 226-4472

March 14, 1994

TO: Members, Subcommittee on Investigations and Oversight

FROM: Subcommittee Staff

RE: Summary of Subject Matter for Investigations and Oversight Subcommittee Overview Hearing on Infrastructure Needs, Tuesday, March 15, 1994, 9:30 a.m., Room B-352 Rayburn House Office Building

INTRODUCTION

The Subcommittee on Investigations and Oversight has scheduled a series of hearings to examine our nation's infrastructure needs, review existing funding levels and projected funding for the future, and consider alternative financing methods. The purpose of these hearings is to establish a comprehensive and up-to-date record of needs and available funding to provide a basis for critical infrastructure investment decisions.

The first hearing in this series will provide a general overview of the nation's infrastructure needs. Subsequent hearings will provide a more in-depth examination of infrastructure needs in the areas of highways and bridges, transit, aviation, and water resources as well as innovative and alternative financing proposals.

The remainder of this memorandum will provide background information on historical spending patterns for infrastructure investment, our nation's infrastructure needs, and funding levels for infrastructure improvements.

BACKGROUND

Investment in our nation's infrastructure – roads, bridges, transit systems, airports, water supply systems, wastewater treatment facilities, railroads – is the key to our nation's ability to compete in the global economy of the 21st century. The issue becomes increasingly important as our national economy becomes increasingly intertwined with the global economy.

The importance of infrastructure investment was recognized by the massive investment in the Interstate Highway program, by the Intermodal Surface Transportation Efficiency Act of 1991, which reshaped the federal transportation program to meet the needs of the 1990s, by the Airport and Airways Development program, by the Clean Water Act's funding of environmental infrastructure, and by the Water Resources Development Act of 1986, which reshaped our nation's commitment to port and inland waterways development.

These legislative commitments to infrastructure development, however, have frequently been reversed by budgetary decisions which severely reduce the level of investment that had been authorized.

Even as a global economy comes nearer to becoming a reality, our record of infrastructure investment has been uneven at best. According to Congressional Budget Office data, in the 1950s and 1960s, most federal infrastructure investment was devoted to highways, aviation, and water resources. During the 1970s, the priority shifted to wastewater treatment, water supply, and transit. Since the 1980s, the priority has shifted back to highways and aviation again.

Numerous studies have shown that infrastructure investment promotes economic growth, enhances productivity, creates jobs, improves the environment, and increases our ability to compete in the global economy. The Committee on Public Works and Transportation has consistently backed investment in infrastructure at fully authorized levels. In the Fiscal Year 1995 Views and Estimates Report filed with the House Budget Committee, the Committee wrote: "It is...in our national interest to step up investment in our physical infrastructure to improve our productivity and to make sure that we enhance our competitiveness in the world market."

TRENDS IN PUBLIC INFRASTRUCTURE SPENDING

Federal investment in infrastructure has decreased over time. The Congressional Budget Office reported last year that the total federal investment in infrastructure (in constant 1990 dollars) increased steadily from $11.6 billion in 1956 to $43.9 billion in 1980. Thereafter, however, investment dropped so that, by 1992, federal spending on infrastructure was $39.9 billion -- a decrease of 9.1 percent over 12 years. (See Attachment 1 for a breakdown of public spending for infrastructure, 1956-1990.)

Our rate of infrastructure investment, as a percentage of all federal spending, has also declined sharply. Infrastructure made up about 3.1 percent of the federal budget in 1956. That percentage more than doubled to 6.3 percent by 1965. However, by 1992 only 3.0 percent of total federal outlays were devoted to infrastructure. Put another way, from 1965 to 1992 our rate of investment in infrastructure as a share of our total

spending was cut in half. (See Attachment 2 for a breakdown of federal spending for infrastructure as a percentage of all federal spending, 1956-1993.)

As a share of the overall economy, the pattern has been the same. Federal infrastructure investment doubled from 0.5 percent to 1 percent of Gross Domestic Product between 1956 and 1959. It leveled off for the next 20 years, achieving a high of 1.2 percent in 1980. Thereafter, the trend was down, falling to 0.7 percent of Gross Domestic Product in 1992. (For a breakdown of federal spending for infrastructure as a percentage of Gross Domestic Product, 1956-1993, see Attachment 3.)

Distribution of Spending

Historically, pursuing a consistent, broad-based infrastructure investment policy with a has been difficult because the federal government has failed to make a long-term commitment to any infrastructure program. Instead, we have favored one infrastructure investment program for a while and then shifted our priority to another.

As noted above, in 1956 total federal spending for infrastructure (in constant 1990 dollars) was $11.6 billion. According to Congressional Budget Office data, of those expenditures approximately 35 percent was dedicated to highways, 10 percent to aviation, and 55 percent to water transportation and water resources. By 1978, federal spending had risen to $40.5 billion and the distribution of spending had changed: highways received 27 percent of the federal share; mass transit received 10 percent; rail, 8 percent; aviation, 15 percent; water transportation and water resources, 23 percent; and water supply and wastewater treatment, 17 percent. After 1980, federal spending fell sharply,

and by 1992 stood at $39.9 billion, $4.0 billion below its 1980 peak of $43.9 billion. Again, the distribution of spending among categories shifted, with increases only for highways and aviation.

INFRASTRUCTURE NEEDS

The population of the United States is expected to increase by approximately 45 million people over the next 30 years. This will increase pressure on an already overburdened infrastructure that is straining to support economic growth. A brief description of infrastructure needs and estimated costs within areas of the Committee's jurisdiction follows.

Highways/Bridges

According to the 1993 Report of the Secretary of Transportation on the Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance, there are approximately 235,000 miles of federal-aid highways that are in mediocre or poor condition and in need of repair. The cost to eliminate backlogged highway deficiencies is estimated to be approximately $212 billion. The average annual cost to just maintain federal-aid highways in their 1991 condition is $48.4 billion (1991 dollars).

There are approximately 118,000 structurally deficient bridges and 81,000 functionally obsolete bridges in the United States that would cost an estimated $78 billion to fix. A structurally deficient bridge cannot accommodate the loads expected for the particular highway of which the bridge is a part; a functionally obsolete bridge does not have the adequate lane or shoulder width or vertical clearance to serve existing traffic

demand. The annual cost to maintain bridges in their 1991 conditions is estimated by the Department of Transportation to be $5.2 billion (1991 dollars).

In view of the highway and bridge needs outlined above, there can be little question of the need for full funding of the Intermodal Surface Transportation Efficiency Act of 1991 [ISTEA]. Full funding of ISTEA would provide an obligation limitation of $18.3 billion obligation ceiling for the core Federal-aid highway programs, an increase of 4 percent over FY 1994, plus an estimated $2.4 billion for programs outside the obligation limitation, for a total program level of $20.7 billion, compared with the President's budget total of $19.9 billion.

Transit

According to the Secretary of Transportation's 1993 Report, the average age of transit buses currently exceeds the federally recommended usable life by 20 to 35 percent. Between 20 and 30 percent of rail transit facilities and maintenance yards are in poor condition. The estimated cost of eliminating backlogged transit deficiencies is $18 billion. The annual cost of replacing and maintaining urban, rural, and special services bus fleets alone is estimated to be $2.2 billion (1992 dollars).

A March 1994 membership survey released by the American Public Transit Association estimated that more than $7 billion in federal funds could be quickly obligated above existing program levels. This number represents only the immediate backlog of unmet transit needs. APTA estimates that an investment of $11 billion per year would be required to restore transit to its pre-1980s level.

ISTEA authorized $2.865 billion for transit formula grants in FY 94; the appropriation for FY 94 was $2.414 billion. Discretionary grants were authorized at $2.050 billion; the appropriation was $1.782 billion. For FY 95, ISTEA authorizes $2.865 for formula grants; the President's budget also proposes $2.865 billion. ISTEA authorizes $2.050 billion for discretionary grants; the President's budget proposes $1.517 billion.

Aviation

Last year, 23 airports in the United States each experienced more than 20,000 hours of aircraft delays. The Federal Aviation Administration expects that number to rise to 40 airports by the year 2000 unless remedial action is taken. Testimony before the Subcommittee on Aviation has estimated that $10 billion per year for the next 5 years would be needed to alleviate airport congestion and reduce flight delays.

Airport Improvement Program

The Airport Improvement Program, which funds infrastructure improvements such as the construction and rehabilitation of runways, taxiways, and apron areas, has not been reauthorized for FY 1994. Reauthorization legislation which was approved by the House contained an FY 1994 authorization level of $2.105 billion. The Senate bill, which awaits Senate Floor action, contains an authorization level of $2.05 billion. The FY 1994 transportation appropriations bill contains an obligation limitation of $1.69 billion for AIP, as contrasted with an FY 1992 obligation limitation of $1.9 billion. Thus, funding has been reduced for the past two years while there continues to be a growing backlog in

unmet airport capital improvement projects. Such projects, if funded, would increase airport capacity and reduce system delays.

The President's FY 1995 budget proposes $1.69 billion for AIP; the Committee's Views and Estimates Report recommended that the Budget Resolution provide at least $2.165 billion to meet our nation's airport infrastructure needs.

Facilities and Equipment

Inadequate air traffic control infrastructure has been cited as a principal cause of the airline industry's financial difficulties in testimony before the Subcommittee on Aviation and the National Commission to Ensure a Strong and Competitive Airline Industry. The Federal Aviation Administration is in the process of modernizing the air traffic control, communications, and navigation systems, as well as conducting research on future systems. These activities are necessary to maintain and improve the safety and efficiency of air travel. In FY 1994, $2.120 billion was appropriated for FAA facilities and equipment. The President's FY 1995 budget proposes $2.269 for facilities and equipment.

Water Resources

In 1992, the U.S Environmental Protection Agency documented funding needs of $137 billion for upgrading and expanding wastewater treatment facilities and for improving water pollution control efforts. The largest current need is $41.2 billion to treat combined sewer overflows that pollute lakes, rivers and streams, and coastal waters. The latest state assessments for water quality show that 44 percent of lakes, 38 percent of rivers, and 32 percent of estuaries are polluted and unusable for fishing or swimming.

At the height of the federal funding effort for wastewater facility construction in 1975, Congress appropriated $4.0 billion. Funding has declined steadily since then. Congress appropriated only $1.24 billion for state wastewater revolving loan funds in FY 1994; the President's budget request for Fiscal Year 1995 is $1.6 billion.

The current estimate for repair, replacement, and expansion of drinking water supply infrastructure is $150 billion. Water supply and drinking water infrastructure has historically been funded primarily by state and local governments. For the first time, Congress appropriated $599 million for state drinking water revolving loan funds in 1994; however, the money cannot be expended until a drinking water loan program is authorized. The President's budget request for state drinking water revolving loan funds in FY 1995 is $700 million.

FINANCING INFRASTRUCTURE NEEDS

According to the 1993 report of the Commission to Promote Investment in America's Infrastructure, Financing the Future, public sector spending on infrastructure in the United States amounts to more than $140 billion annually. Despite that annual spending, projections in various studies of the shortfall needed to meet critical infrastructure needs range from an additional $40-$80 billion annually. Traditional infrastructure financing sources -- government grant programs, tax exempt bonds, and private capital -- will be unlikely to satisfy current and projected infrastructure needs. Although current infrastructure programs may be able to be strengthened to provide more bang for the buck, it is likely that new infrastructure financing sources will need to

be developed in the future. Several alternative financing options are being considered: establishment of a new, federally chartered financing entity, i.e., a "national infrastructure corporation;" creation of new investment options for institutional investors, including securities issued or guaranteed by a national infrastructure corporation; and creation of an investment category within the overall unified federal budget to provide a framework for developing, displaying, and analyzing data needed to consider the investment effects of budget decisions. A later subcommittee hearing will explore potential new sources of infrastructure financing.

HEARING AGENDA

The following witnesses will present testimony at the Subcommittee's March 15th hearing on Infrastructure Needs:

- Mr. Mort Downey
  Deputy Secretary
  U.S. Department of Transportation

- Mr. Andrew Warren
  Chairman
  Rebuild America Coalition

- Mayor Donald Plusquellic
  Akron, Ohio
  Representing the U.S. Conference of Mayors

Attachment 1

PUBLIC SPENDING FOR INFRASTRUCTURE, 1956-1990
(In millions of 1990 dollars)

Year	Total	Federal	Percentage of Total	State and Local[a]	Percentage of Total
1956	66,892	11,638	17.4	55,254	82.6
1957	71,836	12,787	17.8	59,050	82.2
1958	73,967	15,052	20.3	58,915	79.7
1959	78,022	21,605	27.7	56,418	72.3
1960	76,534	23,359	30.5	53,175	69.5
1961	81,329	23,472	28.9	57,857	71.1
1962	82,446	23,799	28.9	58,647	71.1
1963	85,192	24,756	29.1	60,435	70.9
1964	86,861	27,094	31.2	59,766	68.8
1965	90,444	29,229	32.3	61,215	67.7
1966	93,027	28,907	31.1	64,120	68.9
1967	95,769	28,619	29.9	67,151	70.1
1968	97,161	29,206	30.1	67,955	69.9
1969	99,230	28,737	29.0	70,493	71.0
1970	99,959	28,694	28.7	71,264	71.3
1971	105,999	32,044	30.2	73,955	69.8
1972	106,939	31,530	29.5	75,409	70.5
1973	104,430	32,974	31.6	71,456	68.4
1974	102,681	33,046	32.2	69,635	67.8
1975	105,786	33,855	32.0	71,931	68.0
1976	106,557	39,420	37.0	67,137	63.0
1977	107,493	42,345	39.4	65,149	60.6
1978	107,996	40,450	37.5	67,546	62.5
1979	113,697	41,528	36.5	72,169	63.5
1980	116,961	43,898	37.5	73,064	62.5
1981	118,019	42,648	36.1	75,371	63.9
1982	113,610	36,901	32.5	76,708	67.5
1983	115,471	35,229	30.5	80,242	69.5
1984	119,322	37,381	31.3	81,941	68.7
1985	124,761	38,438	30.8	86,324	69.2
1986	131,947	39,967	30.3	91,980	69.7
1987	137,018	36,037	26.3	100,981	73.7
1988	140,586	36,525	26.0	104,062	74.0
1989	142,659	35,541	24.9	107,118	75.1
1990	146,957	36,727	25.0	110,230	75.0

SOURCE: Congressional Budget Office.

a. State and local government outlays are net of federal grants and loans.

Attachment 2

FEDERAL SPENDING FOR INFRASTRUCTURE AS A PERCENTAGE OF ALL FEDERAL SPENDING, 1956-1993

Year	Total	Capital	Noncapital
1956	3.06	1.89	1.17
1957	3.27	2.19	1.08
1958	3.88	3.03	0.86
1959	5.24	4.01	1.22
1960	5.77	4.41	1.36
1961	5.49	4.06	1.42
1962	5.28	4.03	1.25
1963	5.49	4.15	1.34
1964	5.73	4.42	1.30
1965	6.27	4.76	1.51
1966	5.60	4.25	1.35
1967	4.91	3.69	1.22
1968	4.58	3.38	1.20
1969	4.55	3.27	1.28
1970	4.51	3.14	1.37
1971	4.96	3.38	1.58
1972	4.73	3.24	1.50
1973	4.89	3.30	1.59
1974	4.90	3.40	1.50
1975	4.75	3.20	1.55
1976	5.24	3.62	1.61
1977	5.43	3.81	1.62
1978	4.99	3.37	1.62
1979	5.18	3.61	1.57
1980	5.24	3.70	1.54
1981	4.79	3.05	1.74
1982	3.95	2.61	1.34
1983	3.59	2.41	1.18
1984	3.65	2.51	1.15
1985	3.55	2.50	1.05
1986	3.63	2.66	0.97
1987	3.27	2.30	0.98
1988	3.21	2.26	0.95
1989	3.02	2.07	0.94
1990	2.93	2.05	0.88
1991	2.89	2.02	0.87
1992	2.98	2.02	0.96
1993[a]	3.08	2.10	0.98

SOURCE: Congressional Budget Office.

a. Values for 1993 are estimated.

Note: The Congressional Budget Office defines capital spending as primarily the purchase, construction, or rehabilitation of physical assets. Noncapital spending is defined primarily as the operation and maintenance of physical assets.

Attachment 3

FEDERAL SPENDING FOR INFRASTRUCTURE AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT, 1956-1993

Year	Total	Capital	Noncapital
1956	0.52	0.32	0.20
1957	0.57	0.38	0.19
1958	0.71	0.56	0.16
1959	1.00	0.77	0.23
1960	1.06	0.81	0.25
1961	1.04	0.77	0.27
1962	1.02	0.78	0.24
1963	1.05	0.79	0.26
1964	1.09	0.84	0.25
1965	1.10	0.84	0.27
1966	1.02	0.78	0.25
1967	0.97	0.73	0.24
1968	0.96	0.71	0.25
1969	0.90	0.65	0.25
1970	0.90	0.62	0.27
1971	0.99	0.68	0.32
1972	0.95	0.65	0.30
1973	0.94	0.64	0.31
1974	0.94	0.65	0.29
1975	1.05	0.71	0.34
1976	1.16	0.80	0.36
1977	1.16	0.81	0.35
1978	1.06	0.72	0.34
1979	1.07	0.75	0.32
1980	1.17	0.83	0.34
1981	1.10	0.70	0.40
1982	0.94	0.62	0.32
1983	0.88	0.59	0.29
1984	0.84	0.58	0.27
1985	0.85	0.60	0.25
1986	0.85	0.62	0.23
1987	0.74	0.52	0.22
1988	0.71	0.50	0.21
1989	0.67	0.46	0.21
1990	0.67	0.47	0.20
1991	0.68	0.48	0.20
1992	0.70	0.48	0.23
1993[a]	0.74	0.50	0.23

SOURCE: Congressional Budget Office.

a. Values for 1993 are estimated.

TRANSPORTATION AND ENVIRONMENTAL INFRASTRUCTURE NEEDS

TUESDAY, MARCH 15, 1994

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:34 a.m., in room B–352, Rayburn House Office Building, Hon. Robert A. Borski (chairman of the subcommittee) presiding.

Mr. BORSKI. The subcommittee will come to order.

The subcommittee today is beginning hearings on our Nation's overall infrastructure needs and investment levels, one of the key elements in determining whether we will have economic growth in the future or stagnation.

Today, we will hear from witnesses on the general condition of our infrastructure. In future hearings, we will examine specific areas of the infrastructure and potential methods of infrastructure financing.

The infrastructure investment issue is not new. It extends back to the start of our Nation when the earliest settlers were trying to build roads through the wilderness. Infrastructure is not glamorous. It doesn't grab headlines or make for good magazine covers that sell on the news stands. Worst of all, infrastructure investment is not an issue that can be solved with a single decision. There is not one—yes or no—check the right box—snap decision that can put us on the path to infrastructure heaven.

Instead, the rebuilding and improvement of our infrastructure requires a long-term commitment of targeted and planned investment. Rebuilding and expansion is a continuing process that requires glamorless, low-profile decisions that have their ultimate pay-off years, and sometimes decades, later.

The lack of an immediate return has put infrastructure investment at a sharp disadvantage in the budget debates that have dominated the political process for the past 20 years. Many Americans say they want the Government to follow the same rules as the average family does. Unfortunately, governments—all levels of government—may have been emulating the kind of family that lives from day to day instead of the family that prepares for future needs.

Just as some families delay making needed investments—repaving a driveway, installing a new roof, buying a new air conditioner—our Government has been delaying on our needed investments—highways and transit, airports, wastewater and water sup-

ply systems. These investments can only be delayed for so long and then the bills come due. In the case of the infrastructure, the bills are loss of productivity, increased costs of rebuilding and increased congestion, and reduced ability to compete in the international marketplace.

The global economy is becoming more unified every day as agreements such as NAFTA and GATT are approved. We can delay no longer on our commitment to infrastructure investment. The world will not wait for us.

I am encouraged that President Clinton expressed strong support for infrastructure investment from the start of his 1992 campaign. In his campaign book, "Putting People First", he said, "The only foundation for prospering in the global economy is investing in ourselves."

It is extremely helpful that the Administration budget provides virtually full funding of the Highway Program and a significant increase in transit funding. It is disappointing, however, to see that the airport improvement program and the wastewater treatment programs are proposed for continuing low levels.

The issue is whether we are doing enough for our Nation's future economic growth. Should we be doing more to rebuild America and can we do it better? We are staring straight at the global economy and hearing the voice of the car repairman who says "Pay me now or pay me later."

I would now like to recognize the ranking member today, the distinguished gentleman from Tennessee, Mr. Duncan.

Mr. DUNCAN. Mr. Chairman, I am pleased to be filling in for Congressman Inhofe today, the ranking member of this subcommittee, on a day that we will be discussing such a timely topic, the condition of the Nation's infrastructure. Although the committee has thoroughly addressed this issue on several occasions, there is still no comprehensive strategy to deal with, and much less fund, the billions of dollars of immediate infrastructure needs. Hopefully, this hearing and the following ones will provide the groundwork for such a strategy.

The Joint Economic Committee accurately noted in a 1984 report entitled "Hard Choices" that "When a system that all citizens rely upon and take for granted collapses or is inadequate to meet future needs, the impact is far greater than an engineering problem in search of a solution. It creates a sense of public uneasiness, a belief that society is incapable of handling its most basic needs." That statement is as true today as it was 10 years ago.

In the upcoming months, members of the Public Works Committee will be working on two major infrastructure initiatives, the National Highway System and the Clean Water Act. Both have the potential to reassure the public that we can meet our most basic needs. It is my hope that we will have the wisdom to do just that.

I might add that in a day in which there is tremendous competition for Government dollars at all levels, it is the responsibility of this committee not only to assure that our top priority needs are met, but that the taxpayers get their money's worth for every dollar that is spent.

Again, thank you, Mr. Chairman. I look forward to an informative and productive hearing and to hearing from the witnesses who have come here to testify today.

Thank you very much.

Mr. BORSKI. Before we proceed to hear our first witness today, I would like to introduce into the record, at this point, the statement of the Chair of the full Committee on Public Works and Transportation, the Honorable Norman Y. Mineta of California.

[Mr. Mineta's prepared statement follows:]

NORMAN Y. MINETA, CHAIR

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

HEARING ON TRANSPORTATION INFRASTRUCTURE

MARCH 15, 1994

We are now getting into the annual season of battles over the budget, and battles over infrastructure funding are always part of that. It is therefore appropriate that we take the time now to remind ourselves why infrastructure funding is important.

Infrastructure investment plays a critical role in making our economy work efficiently and in making us more competitive in world trade. Transportation accounts for a major share of the costs of all the goods we produce. The more efficiently our transportation network operates, the more competitive our economy will be. Congestion and delays cost money and cost jobs.

An efficient transportation system makes possible the "just-in-time" manufacturing system that has been a key part of the improvement in American productivity over the past ten years. "Just-in-time" transportation cuts the carrying costs of inventory and allows more agile, customized manufacturing.

The billions of dollars that we authorize for highways, bridges, transit, and aviation are meaningless unless those dollars are actually obligated. In the past, we have often had the problem that money we have authorized has not been obligated. The result has been that our highways crumble and become congested, our transit system cannot connect our labor force with the jobs they need, and costly delays multiply in our aviation system.

Our global competetitors realize the importance of infrastructure investment. Japan is investing $3 trillion over ten years to improve its infrastructure. Germany is investing nearly $2 trillion to bring its eastern states up to the same level as the west. And Taiwan, with a population one-twelfth of ours, is investing $240 billion over six years.

It is important that we not face this underfunding problem again this year, so I look forward to this opportunity to refocus our attention on the wide range of transportation infrastructure needs that remain to be met. I particularly welcome our first witness, Mort Downey, speaking on behalf of the Clinton Administration, because the Administration has done much to increase emphasis on infrastructure investments during its first year. We look forward to working with them to maintain this emphasis in the years to come.

Mr. BORSKI. We would like to welcome our first witness, Mr. Mortimer L. Downey, Deputy Secretary, United States Department of Transportation.

[Witness sworn.]

Mr. BORSKI. Mr. Downey, before you begin your statement, I would like to add that just yesterday we received a copy of the Department's ISTEA Regional Roundtable-in-Action Plan, which summarizes the regional meetings you had around the country in November and December. I wanted to congratulate you, Secretary Peña, and the whole Department for a fine piece of work.

The subtitle of the report is "A Progress Report from our Customers". That really is what it is. The action plan—which I think is very responsive to a lot of concerns raised by State and local officials around the country—show how customer-oriented DOT is becoming. I think it is a great example of reinventing Government.

I am proud of the many concerns raised in the report, such as streamlining approval for FTA grants and providing more monitoring to ensure that MPOs play their proper role, which were first raised in this subcommittee's hearing on ISTEA's planning and funding flexibility provisions last October.

I am very pleased that the Department is moving forward to deal with some of these problems. I would invite you, if you wish, at some point in your testimony to talk a little bit about the action plan as well.

TESTIMONY OF HON. MORTIMER L. DOWNEY, DEPUTY SECRETARY, U.S. DEPARTMENT OF TRANSPORTATION, WASHINGTON, DC

Mr. DOWNEY. Thank you, Mr. Chairman.

We are very pleased that we were able to get that report out as timely as we did. The action plan that is in there really represents those things that we can do administratively within the Department to make those programs work better. As you pointed out, we spent a lot of time with our customers over the course of the last several months. Those were the concerns raised. We think there are many things we can do about them.

There may be some things where we have run up against the strictures of existing law. If that is the case, we will be back to talk to you about those as well. We really would like to make these programs work better and help deal with the issue that is the subject of today's hearing on infrastructure. The more we can be effective and efficient in getting the money out to our partners at State and local governments, getting the projects going and getting the results out there, the better off we will all be.

We are very pleased to be here to talk about infrastructure needs. It is an important issue for economic growth, as you pointed out. It has been something that the President has supported. You quoted the same line I would have quoted, so I won't repeat it. But I certainly believe that it is important that we invest in America if we are going to support infrastructure growth.

At the Department, we have a long history of looking at—and hopefully doing something about—infrastructure needs. We have approached it in a fairly structured fashion. That is what I would like to go through this morning. How do we establish these needs?

And how do we rate ourselves as a society in terms of meeting those needs? Then what sort of measures can we take to improve our performance?

We have been developing these needs estimates for more than 20 years. I do make the point that needs are an art statement and not necessarily a science statement. It is not just: What is the physical condition of a facility? It also represents how it is being used. To take a snapshot of the transportation system—whether public transit or highways or aviation—requires that we look at both factors. It is not a single answer, but clearly it gives you a good sense of where you are and where you are going.

We issued last year our biennial report called "Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance". That was the 12th time that such a report has been issued, but the first time that the information on highway systems was provided concurrently with information on transit systems. We think that is important because you are really serving the same demand, and trade-offs on one mode versus another at the local level can really change the performance of both systems. We think it is important that both be looked at.

The way we approach the highway side has developed over a long period of time. A standardized sampling method is used. FHWA receives reports from the States on how over 100,000 sections of highway are performing both in terms of their physical condition and in terms of meeting demand. There is a national inventory on bridges which does the same thing. On the transit side, there is an annual reporting requirement called Section 15 of the Federal Transit Act that requires all the transit operators to identify how their systems are performing.

By simulation methods, FHWA is able to take that data on the 100,000 sample sections and estimate overall where the system is in terms of its deterioration and in terms of the improvements that capital investments are making and do the same kind of a simulation on bridges. Federal Transit looks globally at the issues with respect to buses and with respect to rail transit systems. Since there are relatively few rail transit systems, they actually look at all the data from each of the systems in terms of their current status.

Last year we did integrate highway and transit in the single report, but mainly by stapling two documents together. Over time, we intend to integrate the analysis so that we look at future demand both in total and by mode. The way the highway system performs is almost entirely a measure of congestion, which is essentially the influence of traffic growth and growth in the economy. Projections of how many people will use highways and how many will use transit in the years to come are obviously interdependent and they do influence how much capital we need to invest and where. We need to see the system as a whole.

One area where I think you could be helpful at the appropriate time would be to merge the legislative requirement for these two reports. As currently called for—I think it is an accident of history—we are obliged to offer a highway report one year and a transit report the second year. The way we are dealing with that is in fact putting together a report every year. But in one case, it is old

highway data and new transit. The following year, it would be new transit data but old highway. It definitely makes sense to go on doing this analysis, but it would make more sense to do it in a single document.

Even with this overlapping schedule, we are making improvements. Last year's report estimated the investment needs based on maintaining the current conditions and performance for highway and transit systems, each independently. This year's report will be based on maintaining the overall conditions of performance of the two systems.

Since we don't believe—in the real world—that all projected highway travel demand can or will be met by adding highway lanes, we expect a portion of that demand will be handled by management of the transportation system, by management of transportation demand, and by shifting people from highways to transit. In this year's report, we intend to explore the implications of such policies in terms of market share for transit and the consequent investment needs to support an increased market share.

In the case of airports, we have a similar process. Data is reported by the airport operators, compiled in what is called the National Plan of Integrated Airport Systems. This is essentially a compilation of what the airports have in mind in their capital budgets for the next 5 years. FAA reviews it in a somewhat cursory fashion and they really don't get at performance in their analysis, although it is our goal to move in that direction in the years to come.

What are these reports telling us? The document submitted to Congress last year indicated that the average annual capital investment that would be needed to maintain current—by that we mean 1991—conditions and performance on highways, bridges, and transit would total $55.5 billion. If we look at what it would take to improve conditions to specific levels of cost-effectiveness, the need would be characterized as $73.7 billion. In contrast, the report indicated that a total of only $36.4 billion from all levels of government was being spent in 1991 on those kinds of needs.

We can't use simple arithmetic to subtract one number from the other. I should point out that the estimate of $55 billion is a 20-year average. The needs will grow—not as a consequence of inflation, but as a consequence of traffic growth and the requirement for expanded capacity. So we are comparing 1991 spending against an average of needs over a 20-year period.

But even if you looked at current levels of need versus current levels of spending, there is a significant gap. That gap has been in place for many years. I think we are closing it somewhat, but the gap is what causes the system to degrade in terms of performance.

The consequence in the past of investing at a rate lower than required to maintain conditions and performance has been a backlog of pavement, capacity, bridge, and transit deficiencies. In the 1991 analysis, it was estimated that the cost to eliminate all deficiencies would be $290 billion. Even if it was done over time, that is a substantial amount of investment needed.

The result of that backlog is that almost 250,000 miles of arterial and collector roads have been rated as poor or mediocre. Mr. Chairman, 118,500 bridges out of our 575,000 were rated as structurally

deficient. With respect to transit, 40 percent of the urban rail infrastructure is in a condition less than good, although that percentage has declined since the 1987 rail modernization study was conducted. In addition, over 10,000 urban transit vehicles—buses or rail cars—are currently beyond what should be their normal replacement age.

With respect to airports, total annual investment needs just for projects that are eligible for Federal aid is estimated at $7 billion. Total expenditures for such projects, including both Federal funds, passenger facility charge financing, and local capital, was estimated at $6.2 billion—leaving a shortfall of $800 million a year. The bottom line on those needs assessments is clear: as a society we are investing at levels that don't permit us to maintain the conditions and performance of our transportation systems.

The consequences of that shortfall primarily have affected performance, not condition. The measure of that lack of performance is delay. In the airport system, you see 23 airports currently experiencing significant annual delays. If we don't increase the level of investment, that would rise to 33 airports within a decade.

Delays are expensive. The Federal Highway Administration estimates that congestion in the Nation's 50 most populous urban areas costs over $39 billion a year in time and fuel wasted.

Some good news in the report is that the physical condition of our highways and rail transit facilities has been improving somewhat. As we have stepped up the rate of spending we have stemmed the deterioration of physical conditions, but have not spent enough to improve system performance.

And if we don't keep up the levels of investment by providing adequate funding to maintain current physical conditions, that backlog could go up dramatically. We estimate that if you defer $1 in highway resurfacing that you could do today, you are incurring up to a $4 cost in a couple of years to rebuild. So it is important that as we invest in the system, we really focus on maintaining that physical condition and starting to chip away at the backlog in terms of performance.

At the same time that we face this infrastructure deficit, though, we must recognize that we also face a budget deficit. There is a limit to what the Federal Government can do. And in truth—as I am sure you will hear—there is a limit to what State and local governments can do. We each need to do what we can.

There are two things we must keep foremost in our mind. We need to manage and invest in infrastructure more wisely, and we need to make investment more attractive for the private sector as well as government in order to maximize the amount of investment we see.

In terms of Federal dollars, the President did stress the need for infrastructure investment and proposes to ensure that the Federal Government shows leadership in this area. Our budget for the coming year proposes to fully fund the formula capital programs in ISTEA.

Under this budget, State and local governments will have $3.6 billion more to invest in highways and transit next fiscal year than they had in fiscal year 1993. We propose to maintain airport grant levels at the current amount, even as airports derive increasing

revenues from passenger facility charges as a means of meeting their needs.

At the same time that we propose to increase infrastructure investment, the President also proposes that we invest more wisely. On January 26th, he signed an Executive Order on infrastructure investment requiring systematic and careful analysis of benefits and costs, reviews of operation and maintenance, and encouragement of greater private sector participation.

This Executive Order is not intended to disturb the traditional relationship between DOT and the recipients of our formula grant funds. While we will encourage them to use funds wisely, we are not going to second-guess them on project decisions. We will look at system performance as a whole—a review of what the formula programs are accomplishing—to help us and to help you identify the extent to which we are meeting objectives. We are taking the steps now to implement the President's directive, both with respect to decisions on specific discretionary projects where we will apply the Executive Order and on the formula program reviews.

We are at work on new criteria for selecting and justifying transit new starts and for awarding discretionary airport grants. We are aiming to improve our ability overall to undertake these analyses.

We are also concerned with technology to improve infrastructure management. Again, with the needs that are out there, we really need to look at every possible way to do a better job. We look at not only physical infrastructure, but information infrastructure to make these systems perform more effectively.

Under ISTEA, there are new "management systems" that were required. This is a way the State and local governments can look carefully at how they are investing and what performance they are achieving with respect to pavement, bridges, safety, congestion, public transit, and intermodal facilities. We see these as a useful tool for both identifying priorities and making good decisions. We see ISTEA giving a stronger role to the MPOs to participate in decisions about the best investments should be. And ISTEA authorized congestion pricing as a tool that could have the potential to reduce demand and therefore stretch our investment dollars further.

ISTEA also established the National Highway System. We have submitted our proposal for that and announced that we also need to be looking at a National Transportation System. Those concepts, again, are ways to help set priorities and focus our investment on the projects that have the largest benefits, especially those projects where undertaking investment across a system can pay better returns than simply spotting one project here and one project there.

Lastly, we also need to generate greater private sector involvement in our project financing. With all the needs that have to be met, we need to look for every possible way to generate funding. ISTEA, again, broke major new ground in this area. We are exploring innovative financing techniques. We have been holding meetings both with State and local governments and with the investment community. In the Vice President's National Performance Review, it was suggested that Federal surface transportation funds be used as a capital reserve. That is just one of many ideas that have

been proposed, including the bill you have submitted, Mr. Chairman.

Our first priority is ensuring that the authority we already have in ISTEA is understood and used. We are going to work very closely with project sponsors and bankers to be sure that we know what we can do under the existing law and show how we are pushing the envelope to implement it.

ISTEA has clarified the partnership between the Federal Government and State and local governments. We function primarily as an investor, insuring that national priority needs are met. State and local governments are our partners in those investments, but they are also the ones with the responsibility for operating and maintaining the system. If we are doing our part—and we believe the budget for fiscal year 1995 is the most aggressive step yet in that direction—then we have the right to ask that our State and local partners are also doing their share, ask that they are maintaining the facilities we have helped to build, ask that they are operating them efficiently. The data from the management systems under ISTEA will provide answers to those questions.

One issue that concerns us at the Department is whether our capital assistance programs—particularly for bridges—might create perverse incentives to not maintain the facility but just wait until it is in a state of collapse and ask for help in rebuilding it. When total investment falls short of meeting capital needs, we really can't divert our dollars away from those needs, but we need to assure that regular maintenance will be performed so the fullest useful life of every facility we build is realized.

ISTEA also provided new opportunities for the private sector to join with public partners—both as an investor and as a manager. We look forward to working with you to exploit the opportunities ISTEA provided and to identify new ones in our common goal of an improved infrastructure to support economic prosperity and a better life for all Americans.

That concludes my testimony and I will be pleased to answer any questions you or Mr. Duncan may have.

Mr. BORSKI. Thank you very much, sir.

I would like to first ask a question on the fiscal year 1995 budget.

With full funding for highways increased but less than full funding for transit and a low level of funding for airport improvement grants, does that reflect the Department's infrastructure investment priorities?

Mr. DOWNEY. I think in the context of all the dollars that are available, it is a reasonable reflection of priorities. It also reflects, in general, an emphasis on infrastructure as opposed to other issues within the Department.

We raised the total percentage within the budget from 69 percent in 1990 up to 71 percent. So 71 percent of all our budget this year is going for infrastructure investment.

In terms of the modes, we looked at highways and transit. We pushed the highway number up to the ISTEA limit for a couple of reasons. Number one, there are good investments that can be made that both support economic growth and help stem deterioration.

Second, there is a lot of flexibility to use many of those dollars for transit in urban areas where that choice has been reached.

One of the deterrents in making that choice, as we have gone around the country, was that ISTEA wasn't fully funded on the highway side and transfers weren't even contemplated. We wanted to end that deterrent by saying that they now have all the money available to give them a choice on how to use it.

On the transit side, in terms of capital, we propose to increase the formula part by almost 40 percent. So almost all recipients in the country would have substantially more capital. The one area where we did not increase was in new starts. There it was a judgment that we should not be banking dollars against potential projects in the future, but rather funding those that are approved and ready to go. In fact in the President's budget we asked for full funding for every project that was in an approved stage and are open to discussions about additional new starts when they are ready for that commitment.

Lastly, on airports, we looked at what we could afford and came to the conclusion that a steady state AIP program coupled with a growing use of passenger facility charges and ability to finance at the local level would adequately meet that need. We also asked in our reauthorization proposal for a look at the same kinds of investment and financing opportunities that exist under ISTEA to be put within the airport program so that we could stretch those dollars even further.

Mr. BORSKI. Thank you, sir.

I heard the complaint myself on full funding for ISTEA as far as flexibility in the transit program. We shall continue to see if that works any better.

Has the Department adopted any policies to target infrastructure funds to urban areas?

Mr. DOWNEY. We have to work, obviously, within the statute. One of the difficult points is the lack of any targeting for major portions of surface transportation funds or National Highway System funds. There is a strong philosophical bent within the program as it now exists for support of local and State decisionmaking processes. We are trying to be sure that that is a fair and open process. That was part of our reason for the 10 regional roundtables we undertook. We want to be sure that decisions are being made about urban spending versus rural spending in a full and open way with all the facts on the table and all the issues fully exposed.

On the National Highway System, as we worked with the States to designate that, we wanted to be sure that the proposal would provide service to all parts of the State. We think it does a good job of that.

Of course, the transit program clearly does serve primarily urban interests. We have a hard time absolutely targeting a result, but we certainly want to see what the result is of the process as it now unfolds and judge the effectiveness and compliance that exists with planning regulations and the like in terms of those outcomes.

Mr. BORSKI. Mr. Downey, on page five of your testimony, you mentioned that 1994's transit conditions report will explore implications of an increasing marketshare for transit as a measure of transit investment needs.

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What marketshare do you estimate for transit? How successful have you been to relating them to transit investment needs?

Mr. DOWNEY. We are not finished with that analysis yet, so I can't give you a specific number. Transit's market, in aggregate, has been stable over the last 10 years. The typical way of measuring this is the 10-year census. Transit held its own between 1980 and 1990 in terms of total trips, actually declined a little bit in market share to about 5 percent of all daily work trips, much higher in some parts of the country. We are looking in the analysis for this report at what proportion of the growth we expect would occur as population grows and the economy increases could be absorbed by transit if you assume realistically that expansion of the highway system in urban areas will be constrained by environmental and cost factors.

We want to play that out. We don't have specific numbers yet. But in the past, that had been kind of a constrained analysis. The first time—maybe about 6 or 8 years ago—that FHWA and UMTA did such an analysis they were told not to look at an increased market share. It was just to do an analysis based on the assumption that transit would not grow.

That kind of assures that the outcome in terms of needs will be that the need is not large. We want to go into this with a much more open view of what is the most cost-effective kind of policy we can establish in terms of the needs and then let the urban planning process play it out in terms of specific decisions.

Mr. BORSKI. One comment from Mr. Downs, "I fervently believe that if ISTEA is to be a viable instrument of power sharing between local MPOs, State, and Federal bodies there must be massive investment in training, development, staffing, and planning for MPO staff."

What would be your response to that?

Mr. DOWNEY. We would definitely agree with that. These institutions around the country—and I don't say universally that they have these problems because there are some that are very, very good—but there are some that haven't had much work to do over the last decade. Having little to do, they certainly have not attracted the best and the brightest, nor have we invested in the kind of analytical tools that will be needed.

For example, we are working with Los Alamos National Lab where there are some good modelling skills developed for defense uses, but we think they can be applied to civilian uses to try to create new planning models. We also are encouraging a much closer relationship between EPA, DOT, and the Department of Energy to assure that we are all looking at these issues through at least consistent approaches and compatible models.

We are scheduling training seminars and outreach around the country. In fact, just as we speak, there is a summit here in Washington, DC on ISTEA training needs and what we should be doing and how we should be going about it. So we are very much responsive to this.

As I said, there are good MPOs out around the country just as there are good State highway departments. But as we ask them to do more, we are really going to have to upgrade their skills.

Mr. BORSKI. In your testimony, you refer to the possibility that DOT's bridge capital assistance program may create a perverse incentive to defer maintenance and accelerate the need for eligible reconstruction or replacement. Are you speculating that current circumstances lead to this?

Mr. DOWNEY. I have no particular evidence with respect to the Federal capital program. But coming from New York, it is not hard to know that budget people will always squeeze a budget where they think it will squawk the least. We had experience of this type with the bridges within New York City. No maintenance was done for years on the assumption that when it fell down someone would help fix it. We just can't let that happen. To me, if the Federal Government invests in a capital facility, it is not an unfair mandate to say to those who own it that they should maintain it.

We went through the same experience in my past with the transit system in New York. There when we went to the bond market to borrow billions of dollars to rebuild that system—we had to finance a lot of it ourselves—one of the first questions we were asked was: Can the bond holder be assured that it will be maintained? In fact, are you willing to enter into covenants to do that? We said, Absolutely. We established maintenance schedules and independent review to be sure that every dollar that was invested would achieve the useful life.

I think we are seeing this principle in lots of places. I think the new maintenance systems will help assure that deferred maintenance is not a problem, but it is a very attractive option for budgeteers if we don't make sure that we are vigilant to not let it occur.

Mr. BORSKI. Mr. Downey, do other Nations use infrastructure development strategies that we should consider in the United States?

Mr. DOWNEY. There are a variety of strategies out there, just as there are a variety of countries. You see under-developed nations aggressively investing in infrastructure because they know it will bring about rapid economic growth. You also see the industrialized nations looking, as we are proposing to do, at their investments in a much more systematic fashion.

There was a recent report by the European Union, for example, that is very similar to our National Highway System/National Transportation System approach, where all the nations of the E.U. are looking at the targeted set of facilities—highways, high-speed rail, waterway, and airway—that really provide for national growth. Their strategy is in fact to find the dollars to pay for those. There are both strategic approaches and technological approaches that we should be looking at.

There tends to be, for example, in Europe an approach more in line with long-term investment in terms of how they build facilities. They tend to invest more at the front end to assure that there will be a much longer useful life and much better performance during that useful life. It costs more up front, but it clearly produces greater benefits in the long term.

Mr. BORSKI. Is that the reason we don't follow that policy?

Mr. DOWNEY. I think we tend to not follow that because of concerns about the front end costs and concerns about the investment gap. If we build to a lesser standard, we perhaps can achieve more but thinner coverage of our needs over a short term. But as you

said, it is either "Pay me now or pay me later." We will see those facilities collapsing much sooner if we build them to a lesser standard.

Mr. BORSKI. Are we thinking of changing that?

Mr. DOWNEY. We are doing research on that. We certainly are encouraging State and local governments to look at that. But there is also a penalty they pay. I think we need to look at what the incentives are in our programs. There is also a benefit that will accrue if the long-term investment is made wisely. But it depends in part on what discount rate you put on long-term benefits versus short-term.

Mr. BORSKI. The infrastructure community has been vocal in recent years about the need for additional funding such as through the formation of the Rebuild America Coalition. Do you believe much progress has been made?

Mr. DOWNEY. I think were it not for those kinds of initiatives, we would be far worse off than we are. The fact that the condition reports indicate a stability in terms of physical condition is clearly an improvement over where we were in the early 1980s when things like the Mianus Bridge or the Schoharie Bridge brought this to our national attention. I can only say that with all the effort that Rebuild America and others have made, I think we at best have stabilized the decline. We really have not set ourselves on a course yet for major improvements.

Mr. BORSKI. I will yield now to the distinguished ranking member, Mr. Duncan of Tennessee.

Mr. DUNCAN. Thank you, Mr. Chairman.

Mr. Downey, I noticed when you testified that you said something about moving more people into transit type programs. In the past, some people have advocated large increases in the tax on gasoline as a way of encouraging or forcing more people into mass transit type programs.

Do you or does the Administration favor that type of approach? Do you advocate a substantial increase—or any increase—in the gasoline tax?

Mr. DOWNEY. We are not proposing it at this time. We did support the increase last year.

Long-term it is no secret that gasoline in this country is a very cheap commodity compared to prices elsewhere. That tends to distort a lot of things. It tends to distort——

Mr. DUNCAN. Do you think that is a bad thing, that it is cheaper?

Mr. DOWNEY. I think it is bad if it encourages use beyond our ability to sustain the economy and the resource. For example, last year we saw the corporate average fuel economy numbers for the U.S. auto fleet turn down again because of market incentives—meaning a less fuel efficient fleet than in previous years. That in many ways responds to the price of gasoline. People will buy a bigger car, a more powerful car, if it is not going to cost them a lot more to operate that. I think that is a concern for the long term both in terms of consumption of the natural resource and issues of pollution, global warming, et cetera.

Mr. DUNCAN. Did you see the recent Wall Street Journal article where it told that the Federal Government is forcing auto makers

today to spend huge amounts of money to produce an electric car for which there is absolutely no market?

Mr. DOWNEY. That is largely a function of the California standards. California has opted for the electric vehicle.

Mr. DUNCAN. That article said that they are going to have to get that money back by raising prices for cars all over the whole country.

Mr. DOWNEY. Our general approach—while we are working with California and others on the zero emissions vehicle—we have put a major effort behind improving all vehicles. As you know, the President and the three CEOs of the auto companies agreed on what is called the Partnership for New Generation Vehicles. There is major progress now being made on research for not just the specialized electric vehicle but an across-the-board improvement up to three times in the fuel economy of our vehicles. That could change the dynamic substantially.

Mr. DUNCAN. There has been a lot of talk recently about making the Federal Government operate in a more businesslike manner. But businesses have to make profits or produce results. The employees have incentives or pressure to succeed. Despite many, many billions of dollars being spent on mass transit programs, huge subsidies in the last 20 or 30 years, you have said that the marketshare has declined. You have asked the mass transit people to submit a report assuming that their marketshare is not going to grow.

Have you ever given any thought to telling the mass transit people in your Department that if their marketshare does not increase or if their results do not improve that you are going to be forced to give them less money, just as would happen in this?

Mr. DOWNEY. I think that is the message of the Executive Order that says that we need to look at our infrastructure dollars as an investment, indicate what results we are seeking to achieve, and not fund either projects or programs that aren't achieving those results.

I think in the case of transit, the issue is whether we have really invested enough to make a difference. Market share has declined somewhat, but for a long part of that time period, the quality of service and the reliability of service—even safety of service—had declined very substantially due to lack of capital investment. So it can be a vicious cycle. If no one rides, we don't maintain and we don't invest, the service gets worse, fewer people ride, schedules are then trimmed to reflect less ridership, which makes it even less convenient.

We are not saying in the analysis that we are adopting a field of dreams strategy that if we build it they will come. We want to look at what aggressive investment we could make that could in fact produce that market share.

Mr. DUNCAN. Everybody who comes to see every Member of Congress wants more money for no matter what program. You can name every single program and all of them have their merits or their good points. But total transportation spending, according to this report you have given us, has gone up by about 700 percent in the last 30 years. I am talking about all units of government, from $10.7 billion to approximately $80 billion today.

That is far faster than inflation. That is probably five or six times the rate of inflation during that period. That is far faster than the growth in population.

What is your Department doing to make sure—as I mentioned earlier—that we are getting our money's worth for this massive expenditure of funds? We can talk about shortfalls, but when you are talking about—where I come from in East Tennessee, even $1 billion is a lot of money. The total budget of the State of Tennessee for everything—education and everything—is $11 billion, roughly. So when we are talking about expending $80 billion or $85 billion, that is a lot of money. I agree that transportation is one of the most important functions of Government. But I also believe that it is a key function of this committee and your Department to make sure that the taxpayers are getting the absolute most for their money, that they are getting 100 cents for each tax dollar that is spent.

What are you doing along that line?

Mr. DOWNEY. I agree with you completely that we want to see that kind of return on investment and justification for what we spend.

Mr. DUNCAN. Before you go on, let me just ask this: Do you have any programs to encourage your employees to give bonuses or some kind of incentive programs if they come up with ways to save money or to do things in a better way than has been done in the past? All of us can improve. All of us can get better. That is what I am aiming at.

Mr. DOWNEY. We have spent a lot of time in the last year—and we didn't even have to offer bonuses to do it—to seek the ideas of people both in our Department and in the broader community we work with. Out of that, we developed recommendations both to the Vice President—which were part of his National Performance Review—and have had comparable, more detailed recommendations within our Department. There are a lot of things we can do to make sure that we make good choices on investment, that we provide funding only for the best projects, and similarly we can do a much better job at moving projects more quickly. Nothing runs up the cost of projects more than a delay. We really need to adopt a planning process and a review process that minimizes delay and really focuses time on the key issues.

We need to work better with our partners at the State and local governmental level and with other Federal agencies to be sure that when a project is being planned and undertaken that we don't go through years of design only to rule out an alternative and then start new designs. We need to look at the options early on.

In terms of technology, we have put a major focus on improving the quality of what we do and bringing down the costs by a real application of technology. Not enough has been done in recent years in real simple areas, like pavement, to be sure that we really are up to speed and taking advantage of modern technology to cut those costs. That has to be an emphasis.

In the last year, almost half of the dollars that the Defense Department has made available for dual use technology investment—things that help both our defense capability and our civilian economy—have been targeted to the transportation area. We have high

hopes for a lot of those projects to both bring down the cost and improve the effectiveness of our transportation systems.

So there is a lot we can do. I think the numbers you cited—and I would like to provide something for the record to really compare those to inflation and the like—I think what you really are seeing in terms of overall spending growing more rapidly than either population or other expenses in government is America's desire for mobility. We are travelling more.

Vehicle miles travelled for the last several decades have grown much more rapidly than either population or economic growth. People desire to have more options. It may not be my best choice of use of time, but lots of people want to live one place and work in another and have recreation in another. Government has been providing the facilities that support that demand. But once we build those facilities, we are also obliged to do what we can to maintain them.

I think that is what broadly explains those numbers, but I would like to provide some more analysis for you.

[Subsequent to the hearing, the following was received from Mr. Downey:]

Submittal for the record
Deputy Secretary Downey's testimony regarding infrastructure spending by all units of government:

Mr. Duncan had noted that total transportation spending has gone up about 700 percent in the last 30 years, a rate faster than inflation. The absolute amount of spending by the Federal, State and local governments, however, is only one measure of progress in this area. Transportation requires a mix of public, commercial and consumer expenditures, and it serves many uses including movement of both goods and people for varying purposes by different modes of transportation. It is not possible, therefore, to gauge the appropriateness of a certain level of public capital, operations and maintenance expenditures for transportation with a single measure.

On the other hand, comparing government expenditures with several measures can provide an assessment on whether the aggregate level of expenditures are within reasonable bounds. The attached chart provides an overview of the broad level of expenditures by all units of government in the U.S. on aviation, highway, mass transit, railroad, and water modes of transportation. The data were obtained from an unpublished time-series on government outlays for transportation prepared by the Congressional Budget Office. The chart compares these outlays with measures population, economic activity and transportation use compiled from various sources including the Federal Highway Administration and the Eno Foundation.

The chart shows that for the period 1960 through 1991, constant dollar expenditures by all units of government out-paced the growth in population, but for most of the period grew at a lower rate than gross national product (also in constant dollar terms). These expenditures also grew at a lower rate than the intercity movement of freight as measured in ton-miles, intercity passenger miles of travel and vehicle miles of travel on all U.S. highways and roads.[1] As a general conclusion, we can say that in the aggregate government expenditures per capita on transportation infrastructure has been increasing, but it is a shrinking component of GNP. Also, government expenditures per unit of transportation consumption, such as ton-miles, passenger miles or vehicle miles has generally been decreasing over the last 30 years.

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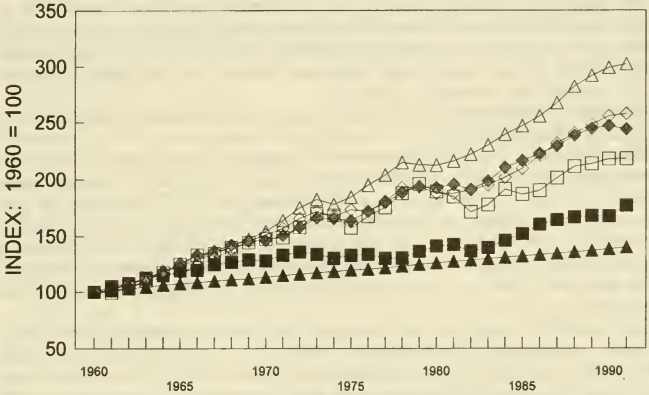
[1] A ton-mile is the movement of one ton of freight the distance of one mile. A passenger mile is the movement of person the distance of one mile. A vehicle mile is the movement of a motor vehicle the distance of one mile.

COMPARATIVE GROWTH
OF GOVERNMENT TRANSPORTATION EXPENDITURES



Transportation expenditures and GNP are in constant dollars.

■ Gov Trans Expen ◆ GNP ▲ Population
⊟ Intercity Ton-miles ⊖ Intercity PMT △ VMT

GNP = Gross National Product PMT = Passenger Miles of travel VMT = Vehicle Miles of Travel

Mr. DUNCAN. Let me ask just one last question.

You said in your testimony that you want to make your programs more friendly to private investment. That sounds good and that is good. That would be good.

But what I have seen in all kinds of Federal departments and agencies—and probably every Member of Congress—is that the Federal Government has become so much bigger it seems that business has become so much bigger because only the really big giants can comply with all the rules and regulations and the red tape. Only they can handle some of these big contracts and then they have the staffs that can get the tax breaks and so forth and so on.

We hear from small businesses who say that they would like to participate in some of these Federal projects, but there are so many delays in payment, so much paperwork—it is cost prohibitive because there is so much red tape and there are so many bureaucratic mazes they must go through.

Can you do something to make your expenditures more friendly to smaller businesses?

Mr. DOWNEY. I think there are things we can do. One that is mentioned in the roundtable report has to do with an enhancements program which was enacted as part of ISTEA where 10 percent of all the dollars in the State surface transportation grants are for small-scale projects that enhance the environment or otherwise improve the quality of the transportation system. These are classically projects that are done both by small governments and small business.

One of the things we found was that it isn't working, for many of the reasons you mentioned. When a local government gets $100,000 to provide for an enhancement in the transportation area, they cannot afford the overhead that goes with that. We really need to find ways to simplify process, simplify procurement, simplify a lot of the administrative reviews, and get more of the money moving out to actual achievements in the field. That kind of level of project—not just in enhancements but other places—is the kind of simple work that small business can be a participant in.

Mr. DUNCAN. You say that we need to do that. Is there someone at the Department of Transportation who is doing that or who is working on that?

Mr. DOWNEY. We are working on a review of what the impediments are. It is one of those areas where if we need change in the statute—whether it is title 23 or Federal procurement regulations or the like—we will be very happy to propose those kinds of changes.

Mr. DUNCAN. Thank you very much.

Mr. BORSKI. The Chair thanks the gentleman.

Mr. Downey, are we providing funds to adequately meet our infrastructure needs?

Mr. DOWNEY. If you define the needs as maintaining the system that we have and expanding its capacity to support economic growth, the answer is no. We are not, as a society. That is not a judgment as to whether that is a Federal or a State or a local responsibility. I think clearly the aggregate numbers are such that we can't say that we are meeting our obligation.

Mr. BORSKI. The low price of gasoline as compared to other nations is really in the tax.

Mr. DOWNEY. That is substantially the major difference.

Mr. BORSKI. Where are we now in the current gas tax? Are we recapturing at some point the gasoline tax for full use for infrastructure?

Mr. DOWNEY. We do capture the 2.5 cents that was enacted in 1990 for the trust fund in October 1995, and that was essential for the trust fund balance. Taxes to support the Highway Trust Fund expire in 1999. The 4.3 cents that was enacted last year goes to general revenue and does not expire. It continues until modified.

Mr. BORSKI. It seems to me that there has been pretty strong bipartisan general consensus—at least from this committee—that the gasoline tax, if it is to be used for infrastructure needs, has strong support. If there is further need, I think it would be beneficial to maintain that if we can.

There have been several proposals in recent years to use bonds secured by the gas taxes to increase the funds available for infrastructure needs and to attract investments from pension funds. Do you believe these proposals hold promise to meet the funding needs we will have in the coming years?

Mr. DOWNEY. Having been a member of a group that made such a proposal, I guess I can't walk away from it. That was a proposal of the Competitiveness Policy Council that studied infrastructure last year.

There are a lot of issues with respect to the pension funds and how we could draw money out of their resources for infrastructure. One proposal had been the issuance of taxable bonds—you need to make them taxable in order to make them an attractive investment for the pension funds—and back them by a Federal gas tax.

The Federal budget, clearly, is not friendly to those kinds of investment approaches. We don't have a capital budget. We treat all expenditures on essentially a pay-as-you-go basis.

Are there other ways within the strictures of the Budget Act to assure that revenues that are collected for investment are used for investment? I think it is an area that we do need to continue to explore. Debt financing, certainly at the State and local level and public authority level, has been an appropriate way to meet capital needs and pay for them over time. But there are a lot of issues here.

Mr. BORSKI. Should we be looking at capital budgeting in transportation?

Mr. DOWNEY. Capital budgeting is taking place at some levels of government. The question is whether there should be or can be a Federal capital budget that is separate from the operating budget. The President this year in the budget documents indicates a willingness to take another look at it, to take a look at it particularly with respect to those things the Federal Government buys for its own capital investment. There is an argument in terms of national investment, but it is not a specific proposal yet for a capital budget.

Mr. BORSKI. Does the Department have a well-defined policy on the use of Federal funds for maintenance of the existing infrastructure or for expansion through new facilities?

Mr. DOWNEY. We certainly support the necessary steps to assure that the present investment is maintained. There is always a debate about who pays for what. There are always things that are sort of along the margin. The general philosophy is that our dollars are capital dollars. They finance major renovations, major replacements, things that have lived out their useful life. It is the responsibility, in general, of State and local governments to provide for the continuing maintenance.

But I think what is most important is that we all agree that it needs to be done and then sort out the resources for achieving it.

Mr. BORSKI. I know you must leave shortly and we appreciate your cooperation today, but I would be remiss if I didn't ask about what the United States Conference of Mayors is going to ask us about later, the unfunded mandates, and using their resources unwisely—at least in their opinion.

I know the mayor of Philadelphia has been on a tirade, particularly with ADA and the unreasonableness of the act, as he sees it, to the point where it hurts the rest of infrastructure in the city. Would you care to comment on that question?

Mr. DOWNEY. Along with the infrastructure Executive Order, the President issued a similar Executive Order on unfunded mandates and said that we would have no more. He wants to be clearly advised of any legislative proposal or administrative proposal that would have the effect of creating such obligations on State and local governments.

Those burdens that are out there—and having been on the other side, I understand them both as burdens and as needs, like ADA—are tough issues to struggle with. The disabled community argues strongly for accessibility and points to the statute as a civil rights statute. The transit operators say, "How can I afford to do that without degrading total service and total investment?"

There is a time period—a 30-year period—for major improvements and they can be staged over time. I think we again must look at the technology and try to bring down the costs where we can. But anytime there is a "mandate" whether funded or unfunded it is responding to some particular set of needs and issues. It falls to our lot in government—whether it is yours or mine—to try to sort these out and do the best job we can on meeting all those needs.

Mr. BORSKI. We greatly appreciate your coming by today and particularly making your very busy schedule work.

Mr. DOWNEY. Thank you, Mr. Chairman. I look forward to working with you on this issue. It is an important one for me and for the Department.

Mr. BORSKI. We would like to welcome our second witness, Mr. Andrew Warren, chairman, Rebuild America Coalition, Washington, DC.

[Witnesses sworn.]

Mr. BORSKI. Welcome. It is nice to have you with us once again. Let me mention that your testimony will be made a part of the record and you may proceed in any way you feel comfortable.

TESTIMONY OF ANDREW WARREN, COUNTY COMMISSIONER, BUCKS COUNTY, PA, CHAIRMAN, REBUILD AMERICA COALITION, WASHINGTON, DC, ACCOMPANIED BY ROBERT J. FOGEL, LEGISLATIVE DIRECTOR, NATIONAL ASSOCIATION OF COUNTIES, WASHINGTON, DC

Mr. WARREN. Thank you, Mr. Chairman. With me today is Robert Fogel from NAC.

I would just summarize my testimony, as you obviously have a copy of it. I will not insult you by rereading it to you.

Before I begin a summary of the prepared remarks, I would mention that last week I had an opportunity to be in a meeting with Labor Secretary Reich. He gave an analogy which I think is very apropos to our subject. He talked about the fact that if you had a frog and put it in a bucket of water and the water was lukewarm the frog would be delighted and just swim around and would thoroughly enjoy it.

If you had a bucket of boiling water and took that same frog and dropped him in there as soon as he hit the water he would immediately realize that something is drastically wrong and would exit very quickly.

However, he then said that if you took the same frog, the same lukewarm bucket of water, and just ever so slowly increased the temperature in that bucket and brought over a rather long period of time the water to a boil, the frog would have stayed there. You would have frog soup and disaster would have struck.

The analogy of what is happening in the opinion of many of us in the Rebuild America Coalition is very real. I think that for many years the temperature has been coming up in the infrastructure of this country. We have been swimming around blithely and in fact we are now seeing some catastrophes.

Rebuild America is a coalition of some 60 organizations, both public and private, whose goal is to bring to the attention of the American public and the American Congress that we do have some real concerns with the infrastructure of this country. We want to increase the awareness for the need of quality reinvestment in our country. We are concerned that we may, as a Nation, be losing some momentum that was gained in the last presidential campaign for a greater look at the Nation's infrastructure.

With our complex problems such as health care, crime, deficit reduction, the defense of this country—all those issues demanding attention from the Congress and from the people of the country—we do not believe, however, that we have the luxury in America of just addressing issues or crises one at a time. Infrastructure in our opinion places at risk the economic health of America as greatly as the health care program does, as the crime does, as the deficit does, et cetera. Frankly, the bill for 20 years of national neglect of our country's infrastructure has now come due.

This past winter, cities all across America who were experiencing ruptured pipes. It has been a tough winter in the northeastern United States. The final reason for that building to collapse in Allentown is not totally in, yet, however, it is a fact that the sink holes that were created, there were water lines that were ruptured. In fact, many of those water lines were built in the 1870s. Those

were the water lines that were in existence that were serving a major northeast city.

Congestion at our airports and on our highways is certainly an issue. Frankly, in Rebuild America, we believe that our economic competitiveness is very closely linked to the viability of our roads, bridges, highways, et cetera. That is an issue that we believe is also being played out throughout the world.

In the United States, we are investing about one-fourth of two of our foremost competitors—Japan and Germany. We are investing 60 percent less than we did in 1960 in the infrastructure process. That is a figure that one of our members—the American Society of Civil Engineers has done a great deal of research. They have gotten that. I will get the exact source of that and supply that to you. But that was from one of our members, the American Society of Civil Engineers.

Considering the spending constraints imposed by last year's budget reconciliation bill, we in Rebuild America are of the opinion that the portion of the President's budget dealing with cities, counties, and States was quite favorable. We are concerned, however, that some Federal programs would be cut back. The first Clinton budget increased spending on transportation substantially—for which, as a member of SEPTA, I am delighted. This budget continues that trend by requesting full funding of the core Federal-Aid highway program and the transit formula capital grant program at the levels authorized by the 1991 ISTEA.

I would just echo Mr. Downey's remarks without repeating them. Full funding of ISTEA is a major priority of ours.

We have five long-term goals. One, of course, was the full funding of ISTEA. I would just mention them and move on. Included in that first goal to improve our Nation's surface transportation infrastructure is the need for the National Highway System time lines to be met. From a local government standpoint, failure to act on the National Highway System by the September 30th deadline could mean a loss of $6.5 billion to local governments throughout the United States.

I would like to emphasize the Coalition's concern that Congress preserve the user fee concept of the highway trust fund. Again, just to reiterate and echo, we are strongly in favor of the 4.3 percent increase in Federal fuels tax. It ought to be reinvested in the infrastructure. That we believe would go a long way to being a source of funding.

The second Rebuild America goal is for Congress to increase funding for water infrastructure needs, including the wastewater program and the President's proposed program for drinking water. EPA estimates that we in America have $137 billion in unmet wastewater capital needs. The drinking water systems nationwide will have to invest $1.4 billion to $1.7 billion annually to implement the Safe Drinking Water Act. So we are quite concerned about the water infrastructure.

Third, Rebuild America Coalition believes that the United States Government needs to establish a long-term multi-year capital budget so that it can budget and account for its physical infrastructure more rationally. Again, not to prolong that discussion, but it is inconceivable to me as a county commissioner, township super-

visor, homeowner that a government cannot exist, cannot operate, without a capital program. Mr. Duncan had mentioned something about being more businesslike. I would be hard-pressed to name any business other than the United States Government that does not have an operating capital budget.

Frankly, we are grateful to the House Public Works Committee for unanimously passing the capital budget provision for inclusion in last November's House Reinventing Government Bill. We are grateful for that. We know we are preaching to the choir, but sometimes the choir needs to know that we appreciate what you're doing.

Our Nation's capital expenditures must be treated in a manner consistent with what they are: investments in our Nation's future and productivity. Frankly, we believe a capital budget is the best way to provide the Congress with the information it needs to determine a Nation's optimal level of infrastructure investment.

States and local governments must be able to take advantage of tax-exempt financing. We know that members of your committee have done a great deal to this. There are various bills out of this committee that would enable the tax benefits to come to local governments. We strongly support many of the results of the Anthony Commission.

And fifth and finally, Rebuild America Coalition supports an increase in Federal resources, including Federal laboratories committed to infrastructure, education, research, and development. We support comprehensive research on performance, construction materials and systems, and efforts to expedite the commercialization of these projects. If we have better cement, better iron, better bridges, and better pipes, they will last longer. That makes a great deal of sense.

My final point would be that it is the intention of Rebuild America to ask President Clinton to convene a White House summit on infrastructure. The purpose of this summit would be to establish a national strategic infrastructure investment plan for the 21st century. We also believe that it will take something like that in order to focus the attention of the American people on the fact that, in fact, this country needs some real immediate attention to the very guts of it, if you will, and make it possible to travel for business.

We also realize that if money were to be invested in the infrastructure, obviously it would create jobs. It is, in our opinion, from our research that for every $1 billion spent on infrastructure there are 50,000 new jobs created. The previous testimony said that there was a spiraling down and we believe there can be a real spiraling up.

Just to conclude, I realize that the task we are talking about is staggering. But frankly, so was the task of building America in the first place. But we did that. We built the greatest country in the world. But I am afraid today that concerning infrastructure, aside from your subcommittee, we have a house that is burning to the ground and most people are standing around trying to decide what color to paint the shutters. We need to have some real direct attention here.

We became a dominant force in the world at the turn of the century. Business schools were turning out clerks that could file

things; bankers were sitting down and arranging plans with businesses; your customers were in your next town and you were going to visit your customer; your salesperson travelled back and forth. We had great tunnels, bridges, roads, and the beginning of airports. The country was moving along and clicking.

Today, as we leave the 21st century, every single one of those things that made us great in the first place have all changed. They have all improved. The clerks have given way to computers. We don't file things now. You do it instantly with computers. The banker doesn't sit with you because we have wire transfers overnight. You use a credit card to make your calls. Your customers are not in the next town or city, they are in the next country; they are overseas. Everything we talked about that made us great has improved, has improved drastically, except that in many, many cases we are still travelling the same tunnels, the same bridges, the same roads that existed in the 1900s.

That needs attention. The task is not easy. We do appreciate your efforts, but it is an issue that we believe must be brought to the attention of the American people. Hearings like this will help do that. Hopefully, a summit with President Clinton's support will do that. We will continue to do it with every forum and breath we can get.

Thank you.

Mr. BORSKI. Thank you very much.

I would like to make a quick observation on the capital budgeting that you talked about so forcefully and how important that is in my view.

We are going to have a debate this week on a balanced budget amendment. It is not going to pass this year because of the Senate, but it is getting closer. It would not be out of the question to see that pass in the near term.

If that were to pass without a capital budget, this country would be in dire, dire condition.

Mr. WARREN. I would concur.

Mr. BORSKI. I think it is very important that we all think about that and promote this capital budgeting as best we possibly can.

In your testimony, you were talking about being disappointed by the Administration's proposed lack of spending for the wastewater State revolving loan fund used by local governments to build and upgrade sewage treatment facilities. A committee bill has been introduced to reauthorize the Clean Water Act. They propose to authorize wastewater State revolving loan fund at $3 billion in fiscal year 1995 and increase that by $500 million each succeeding year, peaking at $5.5 billion in fiscal year 2000.

In your opinion, are the committee's proposed authorization levels adequate for building and upgrading sewage treatment facilities?

Mr. WARREN. I couldn't say whether they are totally adequate, but I can say that they are absolutely going in the right direction. The fact that you have an incremental increase over the next couple of years is a very positive step. I suspect that people could spend whatever you could give them, but it is certainly going in the right direction and most assuredly will help.

Mr. BORSKI. You mentioned in your testimony and spoke about it in your oral presentation the amount of money we are spending toward infrastructure compared to other countries. I think particularly you mentioned that we are spending much less than Germany and Japan.

Mr. WARREN. That's correct.

Mr. BORSKI. Could you elaborate on the implication of these funding levels for our country?

Mr. WARREN. I think the house would burn down.

There are a couple of things the Federal Government can do on this. It won't do America any good—or it won't do a businessperson in Pennsylvania any good to have NAFTA passed if he can't get his product reasonably into Mexico or Canada. In order to do that, we must have substantial bridges and roads to get there.

More and more, our customers in America are not Philadelphia or Baltimore, but our customers are Israel, Germany, and Japan. If roads start backing up because there are potholes all over the place, because Interstate 95 is closed down, or whatever—if we can't get a plane out of an airport because of congestion because there is not adequate highway—all those things will most assuredly have a negative impact on the product and the economy.

I think the neglect of this will continue.

Plus, every time there is a disaster which needs immediate attention—such as a natural disaster anywhere where perhaps a bridge falls—immediately the money is there and they are addressed. But that also takes away from an organized plan and program. That funding and that time causes detours, et cetera. If there is maintenance on it, that wouldn't have to be. I am thoroughly convinced that economically, from a business standpoint today, time and delays are major negative impacts on businesses.

Mr. BORSKI. Can you give us some specific examples in your own area of how lack of funding for infrastructure has been a problem for residents or businesses?

Mr. WARREN. Yes. Let me suggest a couple of things.

First of all, Philadelphia, for example, for the past winter has been—there has been a great number of pipe breakages. Had those sewer pipes been maintained, they would not have been as susceptible to the elements. That is one that immediately comes to mind.

As I said, bridges that need closing and shoring up—SEPTA just put a major, major investment in the infrastructure of its 9th Street Bridge. That is a multimillion dollar shoring up. That, frankly, kept the system going from having it close down.

We must ask the Federal Government to institute some common sense with some of the regulations that are coming down. I thoroughly agree that 4.3 cents would be a way. Instead of having that for deficit reduction, let's reinvest that in the infrastructure.

Again, in Philadelphia, Mayor Rendell tells the case where the ADA has said that there will be curb cuts at every corner in Philadelphia. Don't hang me on these figures, but by illustration, his total budget for capital improvements for any given year may be about $7 million. To do the curb cuts, he is talking about just that being $85 million. There is a situation in Los Angeles where the Federal Government—the EPA—has said that the water in the Los Angeles River will have to be cleaned to a particular level. I heard

the other day the mayor of Los Angeles said that the level to which it is to be cleaned is higher than the drinking water level for the city of Los Angeles.

The money that the mayor of Los Angeles and the mayor of Philadelphia would have to invest on those regulations—although they are good—could and should be reinvested into immediate needs.

Those are some of the things I think we and you could do.

Mr. BORSKI. Mr. Barca.

Mr. BARCA. I am just curious about how we go about in terms of trying to build public support for this. What do you think we need to be doing collectively to try to capture people's attention?

Mr. WARREN. The Rebuild America Coalition can and will go and speak. Very often, we are speaking to the choir when we speak to national associations of ourselves.

What I believe we really need is a national focus. That would come with a White House summit. It will take something of that caliber to focus this. Biased as I am, I do not believe that is so far out of the question if we do suggest that just as health care the economic health of the country rides on not having cities fall down and pipes burst all over the place. That is always immediately reacting where it is going to cost more and immediately take away from projects that we could go into on a timely basis.

I think we also must say that our competitors are doing this. The countries with whom we compete and get their product from their hometown, from their farm—if it is a farm in Wisconsin, that farmer must be able to get his product out of Madison, out of Wisconsin, into Bucks County or wherever he is sending it. If he has to wait overnight in an airport because a plane can't get out—those types of examples must come around. Frankly, those things won't just happen by magic. If it is worth doing, then maybe we ought to look at what other countries are investing, albeit with a gas tax, and see that we can't have it both ways. We can compete internationally, but we need to pay a little bit.

Mr. BARCA. Unfortunately, I don't think it is coming out as a major priority in enough corners of this country. I think that is the challenge we face, to build that level of support.

I just dealt with one of the major farm groups in our State and it didn't come up at all. I brought it up, but it wasn't an issue that came from them.

Mr. WARREN. I can appreciate that because I suspect the farmer is able to get his product out. But we must start hearing from the airports. That is what I think Rebuild America can do, should do, and must do. We must be an alarmist, if you will.

Mr. BARCA. Thank you, Mr. Chairman.

Mr. BORSKI. The Chair thanks the gentleman.

Do other nations use infrastructure development strategies that we should consider in the United States? If there are and we do not adapt similar methods, will this affect our ability to compete?

Mr. WARREN. The real immediate answer I would give is yes. They invest in it. Mr. Downey was talking about the investment of the gas tax and how we are if not the lowest one of the absolute lowest in the world. That is an investment, in my opinion, where

the funding can come from. I know that you can't go out and say that you are going to raise taxes to pave a road.

Some of you said in your opening remarks that this is not a sexy issue. It isn't. But we need to get the American people interested enough to pet a little bit before we can make it sexy. But we need to get them to come along here and say that in fact we must invest. That is one of the things we can do.

Frankly, it must come from the Congress. The parade will not start on a farm in Wisconsin until the farmer can't get his product to market.

Mr. BORSKI. I could just comment that in the last term with Chairman Roe we tried valiantly to rally the country for "Nickel for America" and unfortunately that rally fell short. We wound up with 4.3 cents for the deficit, not for infrastructure. So it is a battle and we have not been able ourselves to get out that message. We need help locally to get that message out loud and clear.

In general, are State and local governments maintaining and improving their existing public works and transportation infrastructure as well as meeting other public demands?

Mr. WARREN. No. Again, in Pennsylvania, we have a problem that you're well aware of. Our only source of income—unless you give it to us—would be the real estate tax. That is archaic. That is another issue.

But the list is legion as to the number of bridges—for a county government to go out and repair a bridge or highway is a major, major cost expenditure. We are falling behind, not because we wouldn't care. That is one of the things that the National Association of Counties said and one of the reasons why we at NACo and me individually supported the idea of the economic stimulus package. Just because you lost that once, I would hope that that idea is not lost forever, just like last year's gas tax is not lost forever.

If counties had that money available, they could have immediately spent it, and wisely. We could have employed people and it wouldn't have been for building swimming pools, although that is not such a bad idea, either. There are many, many demands right now that need to be met and they are not being met.

No, we are not doing it, but it is not because we don't want to.

Mr. BORSKI. What role can the Federal Government play in promoting infrastructure investment programs on the State and local level?

Mr. WARREN. Use the money for what it is intended. When user fees are raised, let them go back into transportation. Don't use it for deficit reduction if it raised particularly at a gas pump. That would be one major thing.

The other would be to help us with some common sense. The Clean Air Act is horrendous, in my opinion. I am not talking about the idea of having clean air, but the simple fact of the matter is that we are there. It will have a very great impact on businesses in the Delaware Valley that have to spend money to meet a nonexistent goal. It is my understanding that when I mow the lawn for one hour I am polluting the air more than if I drive a car 345 miles. When we ride a snowmobile, perhaps in Wisconsin, for one hour you are polluting the air more than if you drive an automobile for 1,200 miles. A chain saw for an hour is 1,500 miles.

Yet the Federal Government has come down to businesses throughout this country and said that in 1988 they were a non-attainment area and therefore must do all kinds of what I believe are issues that won't speak to the problem.

One of the things the Federal Government can do to help county governments and State governments is to help us with some common sense. It just doesn't make sense to cure in 1994 an ailment that existed on one or two days in 1988 that by every given standard does not exist today. Yet we are spending hundreds of thousands of dollars that should be spent for other things like building roads.

Mr. BORSKI. If there are no further questions, let me thank you once again for your cooperation, your ability to come today, and your outstanding testimony. I look forward to working with you in the future.

Mr. WARREN. Thank you. We will be there.

Mr. BORSKI. We would like to welcome our third witness today, Mayor Donald Plusquellic of Akron, Ohio. Mayor Plusquellic is representing the United States Conference of Mayors.

[Witnesses sworn.]

Mr. BORSKI. Thank you, Mr. Mayor. We appreciate your coming by today to give us testimony.

Let me just remind you that your entire statement will be made a part of the record. You may proceed in any way you feel comfortable with.

TESTIMONY OF HON. DONALD L. PLUSQUELLIC, MAYOR, AKRON, OH, REPRESENTING THE U.S. CONFERENCE OF MAYORS

Mr. PLUSQUELLIC. Thank you very much, Mr. Chairman and members of the subcommittee.

I want to express my appreciation for your providing this opportunity for me to appear here today. My name is Donald L. Plusquellic. I am the mayor of Akron, Ohio and a member of the advisory board of the United States Conference of Mayors.

On behalf of the Conference of Mayors, I would commend Chairman Borski and the members of this committee for your continuing interest in and support of measures to improve the Nation's infrastructure.

Someone mentioned earlier that we may be preaching to the choir. I would agree with that statement because I know the excellent work this subcommittee has done to try to bring these significant initiatives and concerns and problems about our Nation's transportation, environmental, and infrastructure needs to the forefront. We appreciate that work.

I want to mention, Mr. Chairman, that the United States Conference of Mayors is a member of Rebuild America. As such, we have been active as a part of this important coalition and will continue to join with Rebuild America in their efforts to increase public awareness of and support for investment in the Nation's infrastructure.

It is a well-documented fact and certainly the record of this subcommittee and throughout the Congress that the Nation's infrastructure has not received the level of investment necessary to sup-

port a growing and expanded economy. There are various ways of measuring that, but as we work together to reverse this trend there are now considerable impediments before us.

This morning, I would like to concentrate on three areas discussing some near-term opportunities to respond to the Nation's infrastructure problems and needs.

First, our organization's priority issue on unfunded Federal mandates relates directly to the substantive issues before this committee and the Congress. I would like to discuss that issue in particular in detail. Unfunded Federal mandates are predetermining increasingly larger portions of local capital improvement programs and operating budgets. The upward spiral of federally directed local spending represents the most significant, and the least understood, constraint on local government's ability to address infrastructure needs.

Second, we need to anticipate emerging constraints to increased infrastructure investment at the local level. The simple arithmetic of local financing shows that cities and counties are losing discretion over existing resources for priority infrastructure needs and are increasingly confronting taxpayer resistance to escalating user fees and charges. As we have shifted away from a shared Federal, State, and local system of financing infrastructure, a system of financing that in the past provided more equity, local tax systems, primarily local user fees, are now expected to carry a larger and larger share of an expanding infrastructure investment need.

Finally, there will be several legislative and policy initiatives that will be brought before this committee and before the Congress as a whole that could further exasperate our efforts to close the investment gap that we all recognize exists. This committee will soon begin work on the Clean Water Act. This one statute, according to USEPA estimates released last week, claims $23 billion annually in municipal expenditures, including both operating and capital outlays. More disturbing is the projection that full implementation of the current law will result in expenditures of $36 billion annually.

Just the project growth—or the delta, so to speak—in municipal sector spending under the Clean Water Act is nearly comparable to all of the program categories under ISTEA.

Mr. Chairman, I would like to focus my attention on one of the United States Conference of Mayors' most pressing concerns. That is the issue of unfunded Federal mandates. It is now a top legislative priority for the Nation's cities and the Nation's counties. One week ago, elected county officials from all over the country were here and held a rally on the steps of the Capitol calling for an end to the "Mandate Madness".

It should come as no real surprise to policy-makers in Congress that the problem local officials have with unfunded Federal mandates has emerged so forcefully. The Advisory Commission on Intergovernmental relations has studied Federal mandates on State and local governments, with its reports showing an almost geometric growth in this practice. As Federal budget constraints have increased, the Federal Government—driven by Congress, the Executive Department, and the agencies—has increasingly resorted

to this practice, which has the effect of commandeering local budgets to achieve national priorities and objectives.

One mayor has repeatedly said, "The Congress and the Federal Government are picking our pockets to pay for their programs." More relevant to the hearing today, I would simply say that Federal mandates are defining the next generation of city and county capital improvement programs given that an increasing share of our available investment is already claimed by these directives.

Let me be absolutely clear on one key point. The Nation's mayors and virtually all other local elected officials are not opposed to the goals of the underlying statutes in such area as clean water, clean air, accessibility, and worker protection. In fact, mayors and others are committed to and broadly support the intent of these statutes. We are simply telling Congress and the Administration that the practice of imposing Federal mandates without resources to implement them must cease.

Commissioner Warren talked about using common sense to apply to what our priorities are and how we take those priorities and apply the funds that our local taxpayers are willing to pay for all services. I think that is probably an excellent way of describing in a very short and concise way my comments here today.

Rather than going into a great many more details, Mr. Chairman, I would ask that this Executive Summary be included in the record of this hearing. It is a report done by the United States Conference of Mayors which is entitled "Impact of Unfunded Federal Mandates on U.S. Cities".

Mr. BORSKI. Without objection, the referenced document will appear in the record.

Mr. PLUSQUELLIC. It was released last October. And I don't know that until mayors actually sat down and tried to calculate that they could fully comprehend the immediate and long-term implications of the practice we have been talking about here.

Let me mention just a couple of facts from this report. Laws such as the Clean Water Act and the Safe Drinking Water Act—the nearly 1,050 cities with a population of more than 30,000 are expending an estimate $6.4 billion in 1993 or the equivalent of 11.7 percent of all locally-raised revenues.

I could go into more detail of the survey results, but I won't account for all the effects of the Federal directives and policies on local infrastructure investment decisions, in total, an enormous portion of our local budgets.

I was going to talk for just a minute or two about an individual that has been in the forefront of this argument, an individual I know, Mr. Chairman, you are very familiar with, Philadelphia Mayor Ed Rendell, and his concern about unfunded mandates and the relationship of these Federal directives to his efforts to improve the condition of his city's infrastructure. But Commissioner Warren already mentioned the specific example of ADA.

I would point out, consistent with what I indicated earlier about the commitment of mayors and local officials to these issues. The infrastructure consequences to Mayor Rendell in providing curb ramps effectively reduces the city's resurfacing budget by 30 percent. I think the irony of the decision rendered in that case is that the city will be making curb ramps at intersections of streets that

were selected for resurfacing, which has nothing necessarily to do with the community's ADA transition plan and where disabled citizens would like to see curb ramps installed first. I think that is important to keep in mind.

Let me shift just for a moment away from the issue of mandates and displacement of local resources and talk about the need to anticipate emerging constraints to increased infrastructure investment at the local level. Someone mentioned earlier the need to raise additional funds and where best to do that. I believe at some point we are going to confront—if we haven't already—widespread resistance from local taxpayers and ratepayers, a reality that has already taken hold in many communities as local officials continue to impose higher taxes, higher user fees, and higher rates to finance new and upgrade existing infrastructure.

I made the connection recently—something probably not necessarily on point with infrastructure—but in Ohio an important element of our local government is our school system. In Akron, in particular, where we have lost the last three tax levies, I have come to the realization that all these additional rate increases—be they water, sewer, or whatever—that people have had to pay because in most cases they didn't have much choice, they finally have an opportunity to take out at the ballot box periodically every 3 to 5 years when school systems have to go back to the local taxpayers and communities all across Ohio—they finally get an opportunity to take out their frustration and they vote against levies, which obviously creates major problems within our city school systems.

I think that is a fact of life that we are going to have to reckon with as we look also at ways to solve additional infrastructure problems.

I could again talk about many other things, Mr. Chairman, but rather than go on and belabor the statistical data and bits of information I have, let me just once again thank you for the opportunity to present this testimony in support of what you and the members of this subcommittee are attempting to do. As you continue your efforts to evaluate and develop effective infrastructure strategies and policies, let me assure you that you can count on the support of the Nation's mayors and local government officials as you continue your work in this area.

Mr. BORSKI. Thank you very much, Mayor. I really do appreciate you coming by today. I know it was a great effort of yours and we really do appreciate it.

Do you feel that the Conference of Mayors has adequate input into legislation before the fact as well as your objections afterwards? With ADA, for example—and I have heard Mayor Rendell speak of this on many occasions about the unreasonableness of the act as far as he is concerned. He talked about curbing intersections—areas where no one would try to cross, yet you must build disabled curb access, where other areas of the city are much more important for the handicapped.

But there cannot be a coming together. The courts seem to be the areas where disabled folks appeal.

Mr. PLUSQUELLIC. I think we do our best by supporting organizations such as the United States Conference of Mayors as well as the National League of Cities. I have been involved in both organi-

zations. There are many other organizations such as Rebuild America and others who have put forth an effort to try to lobby on behalf of the interests of local governments or the needs for citizens to rebuild our infrastructure.

I guess having served as a legislator, as a local city councilman, and as a mayor, I like to have people come before me in various hearings or meetings and commend me for my work, but they don't always do that. I don't want to come here totally criticizing Congress, but I guess sometimes I have to ask whether or not members are listening when our organizations are trying to say, "Please apply some common sense."

I want to interject my personal belief here that the most significant problem is that whenever the mandates are not funded at least in some significant way—be that 25 percent or 50 percent or even in the good old days when some of the sewer and water projects were 80 and 90 percent funded—there was a price tag associated with each particular item as you went down the list to include or not include various parts of a bill and a statute. When you take away the price tags and let somebody else pay the price, suddenly that common sense is removed from the system. Our goals can then be whatever it is we would like them to be.

I think we have lost that opportunity to put in perspective what it is that all our constituents are willing to support on whatever level of government the final bill comes due what level of support the taxpayers are going to agree to provide. Then with that level of support, What are our top priorities? Are they really to do these things in areas as we have talked about in Mayor Rendell's city to provide ramps where even the local ADA Committee has not defined as a high priority?

Those are the kinds of things I think have been lost whenever Congress has continued to pass these without having a price tag or being a partner in paying for it.

Mr. BORSKI. Let me assure you that at least this Member stands willing to listen to the Conference of Mayors and League of Cities for not just future endeavors on the unfunded mandate problem, but also some of the situations we have before us now. If there are recommendations you all have or are developing, I would be very interested in hearing from you.

What have the mayors of America done in their decisionmaking on the local level to demonstrate that infrastructure is a top priority?

Mr. PLUSQUELLIC. I think raising the rates as significantly as all of us have had to do—those of us who have been able to survive at the same time we are raising rates on local ratepayers, taxpayers, and constituents—that has not been an easy task in explaining why those rates have significantly increased. It may be our wastewater rate, where our charges have probably tripled in the last year just in Akron alone. It may be our water rates that have in the last decade at least doubled, maybe increased even more significantly than that. Or it may be our sewer rates.

I think local officials—be they county commissioners, city councilmembers, or mayors—have all had to deal with this issue on the front line. I think we do what we have to do, which means that we pass off these costs to our ratepayers. They are the ones af-

fected the most. Yet I am not certain that if we look at a big picture we need to run government more like a business and taxpayers need to get the most value for their dollars. I am not sure that we can honestly say that when we realize how much we have spent of those increased tax dollars to do the things that the Federal Government has said that we have to do and comparing that to the other priorities we have, such as replacing bridges or maintaining bridges.

I heard the criticism earlier about local governments not maintaining bridges and waiting for the bridge to fall down because someone then will come and rebuild it. I think local government officials are no different than most human beings. They do things they must do in order to survive. If they must put police officers out on the streets to be able to keep our streets safe for our citizenry and they have to take money from a bridge maintenance program that they would like to do but can't because that is an extra 50 police officers—I think they make those decisions they have to make at the present time.

Mr. BORSKI. On page six of your testimony, you refer to future survey instruments by the United States Conference of Mayors that will provide support for the subcommittee's inquiry.

Would you elaborate on what kind of information you will be seeking in a survey and when you would expect the results to be available?

Mr. PLUSQUELLIC. I mentioned earlier that until we begin the process of putting pencil to paper to actually calculate the real cost—I think we had a general idea. There has been some criticism of this report and the accuracy. As I have said, let's say that we are 50 percent off. If you chop these numbers in half, it is still a significant portion of all our local budgets.

In the planning process of the next report, we are attempting to make absolutely certain that we are even more accurate so that there is less question about the information we provide to you. So Congress can be better informed on making those decisions.

So it is really more an attempt to make absolutely certain that the next effort will be even better and have more statistical information for you to be able to better choose the priorities for us.

Mr. BORSKI. In general, are State and local governments maintaining and improving their existing public works and transportation infrastructure as well as meeting their other budgetary demands?

Mr. PLUSQUELLIC. I would say not really. I think the decision, while we have not had to make it quite—it wasn't that clear in Akron, Ohio. I think for many cities the decision is that clear as far as deciding whether you are going to hire 50 or 100 police officers to keep your streets safe or painting the bridge to keep up the maintenance and inspection program. You just can't afford it. One you can let go and the other you can't.

I think they are trying to provide the immediate, necessary expenditures to be able to do their business of governing on the local level, but I don't think they are really keeping up with the needs that exist there.

Mr. BORSKI. What role do you think the Federal Government can play in promoting infrastructure investment programs on the State or local level?

Mr. PLUSQUELLIC. Stay the hell out of our pockets. [Laughter.]

Commissioner Warren mentioned the common sense approach. I think we need to look at that. A comprehensive environmental plan that prioritizes those expenditures on each local level to address the true problems rather than establishing an across-the-board standard for everyone, where one problem may be significantly more important than another, would help to then show to local government that you're concerned about making certain that taxpayers get the most value for their dollars and addressing the priority issues first rather than a certain particular time that a particular statute requires compliance.

I think we could always use more money if we ever got to the point of having the Federal Government participate in many of these programs again. We complained when you were a partner before, but not being a partner is a worse position than the partnership that existed. So we will go back to the days when we had a true partnership.

Mr. BORSKI. Mayor, I have no further questions. Let me thank you and just mention that I think being a mayor today is the single toughest job in the United States of America. We appreciate very much the work you are doing. I thank you again for your testimony today and your response to our questions. It has been most helpful.

Mr. PLUSQUELLIC. Thank you for the opportunity.

Mr. BORSKI. Thank you, sir.

This subcommittee hearing is adjourned.

[Whereupon, at 11:34 a.m., the subcommittee was adjourned, to reconvene subject to the call of the Chair.]

PREPARED STATEMENTS SUBMITTED BY WITNESSES

STATEMENT OF

MORTIMER L. DOWNEY

U.S. DEPUTY SECRETARY OF TRANSPORTATION

BEFORE THE SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

OF THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

ON THE NATION'S TRANSPORTATION INFRASTRUCTURE NEEDS

March 15, 1994

I am pleased to appear before this Subcommittee to discuss transportation infrastructure needs, and I commend you for holding this series of hearings to highlight the importance of infrastructure to the Nation's economic well-being and to the quality of life for all Americans.

The Infrastructure Deficit

A well functioning transportation infrastructure is a basic requirement for a mobile and prosperous society. The ability to move people and goods safely and efficiently affects the price of goods in our markets, our ability to sell our products overseas, and the quality of life of Americans who travel--virtually all Americans. Our dependence on transportation infrastructure is demonstrated constantly--as we commute back and forth to work and travel to meetings in distant cities, as our children travel back and forth to school, as produce is delivered from farm to market,

as we travel to the grocery store, as grain and fuel moves along our waterways, as our exports cross the oceans.

If we let the condition or performance of our infrastructure deteriorate, it costs us more--in time and money--to move from place to place. That is why Governor Clinton made "Rebuilding America" a major theme of his campaign for the presidency. As he and Senator Gore wrote in Putting People First,

> In the 1980s, the concrete foundations of the United States crumbled as the investment gap widened between America and our global competitors.
>
> ...
>
> To build a twenty-first century economy, America must revive a nineteenth century habit--investing in the common, national economic resources that enable every person and every firm to create wealth and value. The only foundation for prospering in the global economy is investing in ourselves.

Estimates of Infrastructure Investment Needs

You have said that the purpose of your hearings is to review our country's highway, transit, and aviation infrastructure needs; detail the importance of the infrastructure to the nation's economic competitiveness, productivity, and environment; examine past and current funding levels; and explore alternative financing methods.

The Department has been developing infrastructure investment needs estimates for more than twenty years. But we must be careful in assessing needs: such estimates are not simply derived from laws of physics; they have much to do with principles of

human behavior and they can vary with changes in the economy.

How Our "Needs" Estimates are Derived

Early last year, the Department submitted its biennial report on "The Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance." That report was the twelfth such report on highway and bridge conditions and the first to formally combine information on our highway systems with information on our transit systems.

The Department's highway capital investment estimates are developed using data from the Highway Performance Monitoring System (HPMS). The HPMS was developed jointly by the Federal and State governments in the late 1970s to provide a continuing source of standardized data on highway conditions and performance. The data system includes a statistically drawn sample of about 105,000 highway sections representing approximately 1.2 million miles of highway functionally classified as arterials or collectors. Bridge condition information is obtained from the National Bridge Inventory, which contains detailed data on the structural, deck condition, and performance characteristics of all bridges and culverts 20 feet or greater in length. Transit information is developed from the data reported to the Federal Transit Administration (FTA) by transit agencies as required by Section 15 of the Federal Transit Act and from results of the Nationwide Personal Transportation Survey.

Highway investment estimates come from an engineering-based simulation using

HPMS data to estimate future highway deterioration and the effects of capital improvements. Bridge requirements are estimated by a similar simulation model using the Bridge Inventory data. Transit estimates for buses and paratransit are developed by applying generally accepted equipment and facility replacement rates to the existing transit stock and adding costs for new stock to meet increasing demand. Rail estimates are taken from the "Rail Modernization Study," a separate FTA engineering study covering each of the Nation's rail transit systems on an individual basis.

While highway and transit information was combined in last year's report, it was not truly integrated, but that must be our goal. A key factor in estimates of investment requirements is future demand, both in total and by mode. Performance of the highway system--and, to a lesser extent, its condition--is almost entirely a measure of congestion, which is directly influenced by traffic growth. Projections of how many people will use highways and how many transit in the years to come are obviously interdependent and influence estimated investment requirements.

We have to see our surface transportation system as a whole and assess the interrelationships as we estimate investment needs. Your committee can help in that regard: the highway and transit conditions and performance reports are on different cycles by statute. In order to meet the transit reporting requirement, we will issue another report this year, which will have updated transit information but old highway information. Next year, when we will owe you a highway report, we will issue

another report with updated highway information to meet your requirement but year-old transit information. You could help by putting the requirements on the same time basis, so that we can not only be timely, but be realistic in evaluating the interrelationships between the modes.

But we are making improvements. Last year's report estimated investment needs based on maintaining current conditions and performance for highway and transit systems independently. This year's report will be based on maintenance of overall conditions and performance. Since we do not believe that all projected highway travel demand can or will be met by adding highway lanes, but, instead, that a portion will have to be handled by transportation system management, transportation demand management, and transit, this year's report will explore implications of an increasing market share for transit as a measure of transit investment needs.

Our airport needs estimates are developed from data reported by airport operators and compiled in the "National Plan of Integrated Airport Systems." The data they report is basically the capital improvements they are tentatively planning for the next five years. The Federal Aviation Administration reviews the project lists and removes projects that seem unlikely to be advanced, but the report is not a performance-based analysis of investment needs. It is our goal to move in that direction in the years to come.

What Our Needs Estimates Tell Us

The highway and transit report submitted to Congress last year indicated that the average annual capital investment needed to maintain 1991 (the year the data were collected for the report) conditions and performance on highways, bridges, and transit systems totaled $55.5 billion. The average annual capital investment needed to improve conditions and performance to specific cost-effectiveness engineering guidelines associated with moderate performance was reported as $73.7 billion. Those are expressed in 1991 dollars and do not reflect inflation. In contrast, the report indicated that a total of $36.4 billion from all levels of government was spent in 1991 on the kind of highway, bridge, and transit capital needs that the report includes.

A consequence of investing at a rate lower than required to maintain and improve conditions and performance has been a backlog of highway pavement, capacity, bridge, and transit deficiencies. The estimated 1991 cost to eliminate those deficiencies was reported as $290 billion. In 1991, approximately 234,500 miles of arterial and collector roads were rated as "poor" or "mediocre." In 1992, about 118,500 of the Nation's 575,000 bridges were rated as structurally deficient. With respect to transit, 40 percent of urban rail infrastructure is in less-than-good condition, but that percentage has declined from 60 percent when the 1987 Rail Modernization Study was conducted. In addition, over 10, 000 urban transit vehicles are past their normal replacement age; that figure has remained stable in recent years.

With respect to airports, total annual investment needs just for projects eligible under the Federal Airport Improvement program are estimated at $7 billion; total annual investment for such projects (including Federal funds) is estimated at $6.2 billion, leaving a shortfall of $800 million per year.

The bottomline of our various needs assessments is clear -- we have been investing at levels that do not permit us to maintain the conditions and performance of our transportation systems. The consequences of the shortfall have primarily been in performance of the systems -- delays. For example, there are 23 airports currently experiencing annual delays of more than 20,000 hours. Without improvement, there will be 33 airports experiencing this degree of delay by the year 2002. And delays are expensive: the Federal Highway Administration (FHWA) estimates that congestion in the Nation's 50 most populous urban areas costs over $39 billion a year in time and fuel wasted. The conditions of our highways and rail transit facilities have been improving somewhat. But if adequate funding is not available to maintain conditions, the backlog of investment needs goes up dramatically: deferring one dollar in highway resurfacing can mean up to $4 in highway reconstruction costs in two years.

But, at the same time that we face an "infrastructure deficit," we face a "budget deficit." There is a limit to what the Federal government can do and, in truth, what State and local governments can do. We need to do our parts, but we need to do two other things: manage and invest in infrastructure more wisely and make infrastructure

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investment more attractive for the private sector.

Federal Investment

The President stressed the need for infrastructure investment, and he proposes to ensure the Federal government does its part. His budget for the coming fiscal year proposes to fully fund the formula capital programs in the Intermodal Surface Transportation Efficiency Act of 1991--ISTEA. Under his proposal, States and local governments will have $3.6 billion more to spend on highways and transit next fiscal year than they had in FY 1993. The Budget proposes to maintain airport grant funding at this year's level even as airports derive an increasing amount of revenue from passenger facility charges to help close the gap between needs and investment. Altogether nearly 71 percent of our proposed spending within DOT is for investment in infrastructure, up from 69 percent in 1990.

At the same time he proposes to increase infrastructure investment, the President also proposes that we invest more wisely. On January 26 of this year, the President signed an Executive Order on Infrastructure Investments. That Order requires that Federal agencies conduct systematic analysis of the expected benefits and costs of proposed infrastructure investments, periodically review operation and maintenance of facilities to ensure their efficient use, encourage greater private sector participation in financing and managing infrastructure, and encourage the recipients of Federal grants to apply the same principles to their program administration. The Executive Order will not

disturb the traditional relationship between DOT and the recipients of our formula grant funds. While we will encourage them to use our funds wisely, we will not second-guess them on specific project decisions. The Order does direct us to do system-level reviews of our formula programs, and that information will help us and Congress identify the extent to which our programs are meeting their objectives.

We are taking steps now to implement the President's directive. We are at work on new criteria for selecting transit new start projects, as required by ISTEA, and for awarding discretionary airport grants. We are aiming to improve our ability to conduct system-level reviews across all modes. In particular, FHWA is developing a new Highway Economics Requirements System (HERS) that will bring cost-benefit analysis into the analytical model to evaluate highway investment needs, and we see the potential for application of the model to other modes.

Infrastructure Management

There are exciting new technologies to improve infrastructure management that we are hard at work on. Infrastructure can be divided into physical infrastructure and information infrastructure. Improvements in information infrastructure have great potential to promote more efficient use of the physical infrastructure. Intelligent Vehicle-Highway Systems--IVHS--is the most prominent. It covers a whole range of diverse information and control technologies to make highway use safer and more efficient. Self-diagnostic sensors on, for example, "smart" bridges, report when a

bridge needs repairs and can help target maintenance and renewal when it is most timely.

ISTEA took a major step forward to improve infrastructure management with its mandate for States to have management systems in place for pavement, bridges, highway safety, congestion, public transportation facilities and equipment, and intermodal transportation facilities and systems. The management systems are a tool for the States to use to identify the priorities for investment. ISTEA also gave a stronger role to metropolitan planning organizations (MPOs) in making transportation decisions and new flexibility in the use of Federal funds to support projects that best satisfy real transportation needs, without regard to the Federal pot of money from which the funds come. Congestion pricing, for which ISTEA authorized a pilot program, also has potential to reduce demand and, therefore, investment needs.

ISTEA also established the National Highway System (NHS). As you know, Secretary Peña submitted our proposal for the NHS last December and announced at the same time the start of an effort to identify a National Transportation System (NTS). Both concepts are important for helping to set priorities for investment and for focusing our attention on a whole system. Individual investments have payoffs, but, if we approach investment on a system-wide basis, the benefits of our investments will be greater than the sum of the benefits of each individual project because each improvement supports the others. For example, replacing a bridge on one highway with one of greater

capacity and widening a segment of another highway may both be cost-beneficial, but, if those improvements are made on the same nationally significant route, greater overall capacity may be achieved and benefits may exceed the total of the two separate investments.

Greater Private Sector Involvement

Comparison of assessments of investment needs with estimates of current investment levels makes clear that more investment is needed. We need to make our transportation projects more attractive to private investors. Again, ISTEA broke major new ground in this area, most notably with its provision for much broader mixing of Federal funds with toll revenues to build and improve highways, bridges, and tunnels. The Secretary has directed us to explore innovative financing techniques, and we have been holding meetings with representatives of State and local governments and the investment community. The Vice President's National Performance Review suggested permitting Federal surface transportation funds to be used as a capital reserve. There have been innovative proposals in Congress, including one by you, Mr. Chairman. There is great interest in promoting more investment and clearly there is the need.

Our first priority is ensuring that the authority already provided in ISTEA is understood and used. Then we want to understand what barriers there are to more investment, and we will be working with this Committee on those as we identify them.

Roles of the Various Partners in Infrastructure Revitalization

ISTEA helped clarify the partnership between the Federal government and State and local governments. The Federal partner is primarily the investor ensuring that key national priority needs are met. State and local governments are our partners in those investments, but they are also the operators and maintainers. If we at the Federal level are doing our part--and we believe the President's Budget for FY 1995 is our most aggressive step yet in that direction--then we have the right to ask that our State and local partners do their part. Are they maintaining the facilities we have helped them build? Are they operating them efficiently? Data from the management systems as they are put in place will provide answers.

An issue for this Committee and for us at the Department is whether the design of our capital assistance programs, especially in the case of bridges, may create a perverse incentive to defer maintenance and accelerate the need for eligible reconstruction or replacement. As I said, total investment for capital falls short of capital needs, and I would not want to see diversion of Federal funds away from meeting those needs, but we must work with our State and local partners to assure that regular maintenance is indeed performed so that the fullest useful life of every facility built is realized.

ISTEA also provided new opportunities for the private sector to join the public partners. The private sector has a significant role both as investor and manager. We look forward to working with you to exploit the opportunities ISTEA provided and to

identifying new ones to advance our common goal of an improved infrastructure that can support economic prosperity and a better life for all Americans.

That concludes my prepared testimony. I would be pleased to answer any questions you may have.

THE UNITED STATES CONFERENCE OF MAYORS

1620 EYE STREET, NORTHWEST
WASHINGTON, D.C. 20006
TELEPHONE (202) 293-7330
FAX (202) 293-2352

STATEMENT BY

THE HONORABLE DONALD L. PLUSQUELLIC

MAYOR OF AKRON

ADVISORY BOARD MEMBER
THE UNITED STATES CONFERENCE OF MAYORS

BEFORE THE

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

U.S. HOUSE OF REPRESENTATIVES

MARCH 15, 1994

STATEMENT BY THE HONORABLE DONALD L. PLUSQUELLIC

Mr. Chairman and Members of the Subcommittee. Thank you for the opportunity to appear before you today. I am Donald L. Plusquellic, Mayor of Akron, and member of the Advisory Board of The United States Conference of Mayors. On behalf of the Conference of Mayors, I commend Chairman Borski and the Members of this Subcommittee for your continuing interest in and support of measures to improve the nation's infrastructure, the essential systems that represent the backbone of national, regional and local economies. Considering the number of significant initiatives now pending before this Congress, these hearings on the nation's transportation and environmental infrastructure needs are most timely.

Mr. Chairman, The U.S. Conference of Mayors is a member of Rebuild America. As such, we have been active as part of this important coalition and continue to join with Rebuild America in their efforts to increase public awareness of and support for investment in the nation's infrastructure.

Mr. Chairman, it is well-documented in the record of this Committee and throughout the Congress that the nation's infrastructure has not received the level of investment necessary to support a growing and expanding economy. As we work together to reverse this downward trend, there are now considerable impediments before us. This morning I would like to concentrate on three areas, discussing some near-term opportunities to respond to the nation's infrastructure problems and needs.

First, our organization's priority issue on unfunded federal mandates relates directly to the substantive issues before this Committee and the Congress and I will discuss this area in some detail. Unfunded federal mandates are pre-determining increasingly larger portions of local capital improvement programs and operating budgets. The upward spiral of federally-directed local spending represents the most significant, and the least understood, constraint on local governments' ability to address infrastructure needs.

Second, we need to anticipate emerging constraints to increased infrastructure investment at the local level. The simple arithmetic of local financing shows that cities and counties are losing discretion over existing resources for priority infrastructure needs and are increasingly confronting taxpayer resistance to escalating user fees and charges. As we have shifted away from a shared federal, state and local system of financing infrastructure, a system of financing that in the past provided more equity and progressivity, local tax systems, primarily local user fees, are now expected to carry a larger share of an expanding infrastructure investment need.

Finally, there will be several legislative and policy initiatives that will be brought before this Committee and before the Congress as a whole that could further exasperate our efforts to close the investment "gap" that we all recognize exists. This Committee will soon begin work on the Clean Water Act. This one statute, according to U.S. EPA estimates released last week, claims $23 billion annually in municipal expenditures, including both operating and capital outlays. More disturbing is the projection that full implementation of current law will result in expenditures of $36 billion annually.

Mr. Chairman, just the projected growth, or the "delta" so to speak, in municipal sector spending under the Clean Water Act is nearly comparable to all of the program categories under ISTEA.

Mr. Chairman, I would focus my comments on one of The U.S. Conference of Mayors' more pressing concerns. That is the issue of unfunded federal mandates. It is now a top legislative priority for the nation's cities and the nation's counties. One week ago, elected county officials from all across the country held a rally on the steps of the Capitol, calling for an end to the "Mandate Madness."

It should come as no real surprise to policy-makers in Congress that the problem local officials have with unfunded federal mandates has emerged so forcefully. The Advisory Commission on Intergovernmental Relations (ACIR) has studied federal mandates on state and local governments, with its reports showing an almost geometric growth in this practice. As federal budget constraints have increased, the Federal government, driven by the Congress, and Executive Department and agencies, has increasingly resorted to this practice, which has the effect of commandeering local budgets to achieve national priorities and objectives.

As one mayor has repeatedly said, "The Congress and the Federal government are picking our pockets to pay for their programs." More relevant to the hearing today, I would simply say that federal mandates are defining the next generation of city and county capital improvement programs given that an increasing share of our available investment is already claimed by these directives.

Let me be very clear on one key point: the nation's mayors, and virtually all other local elected officials, are not opposed to the goals of the underlying statutes in such areas as clean water, clean air, accessibility and worker protection. In fact, Mayors and others are committed to and broadly support the intent of these statutes. We are simply telling Congress and the Administration that the practice of imposing federal mandates without resources to implement them must cease.

We now underestimate the considerable influence federal mandates wield on our infrastructure investment decisions. Quite frankly, until The U. S. Conference of Mayors report, Impact of Unfunded Federal Mandates on U.S. Cities, was released last October, many mayors did not fully comprehend the immediate and longer-term implications of this practice. With your agreement, Mr. Chairman, I would ask that this report or its executive summary be included in the record of this hearing.

First, the report tells us that for the ten mandates we studied, which include laws such as the Clean Water Act and the Safe Drinking Water Act, the nearly 1,050 cities with a population of more than 30,000 are expending an estimated $6.4 billion in 1993 or the equivalent of 11.7 percent of all locally-raised revenues.

Over the next five years, projected costs for these cities to comply with these ten mandates will total $54 billion. Let me underscore a key point: the projected five-year costs reflect what cities knew at the time about current, and in some cases anticipated requirements, raising the potential that these costs may be conservative. For example, U.S. EPA's "conformity regulations" were released in final form last November, a month after the survey results were compiled.

The report estimated Clean Air Act compliance at $3.7 billion or only about seven percent of the $54 billion total. I believe this is a level that understates the potential costs impacts of the Clean Air Act.

Cities were asked to provide examples of programs and investments that were displaced by the federal mandates. Cities overwhelmingly indicated that infrastructure investment, followed by police protection and public safety, as the two areas most often affected by requirements to divert local revenues to satisfy these mandated costs.

Let me provide some further context for the findings of this report. The costs of complying with only ten, not all, federal mandates last year is equivalent to what all of these cities expend on police protection, the largest single category of city budgets. To reach the projected five-year total, these same ten mandates will grow by 17.5 percent annually, claiming by 1998 more than 22 percent of locally-raised revenues (assuming annual growth in local revenues of four percent). Mr. Chairman, five years from now, this report is telling us that nearly one out of every four dollars we raise has already been "spent" by federally-imposed directives.

The City of Akron participated in the Conference's survey. Our actual costs last year of $21 million are projected to reach $79 million by 1998, totaling more than $200 million over the five-year period. With a population of 223,000 our community has combined sewer overflows (CSOs), which are now targeted for aggressive solutions under the Clean Water Act and account for a sizable portion of these costs.

Mr. Chairman, the data that I have just presented assesses the impacts of ten mandates on the 1,050 largest cities. It does not account for the more than 19,000 other cities and other municipalities and the more than 3,000 counties across the country. U.S. EPA has produced data on compliance costs for smaller communities that consistently projects higher per capita compliance costs to meet their regulatory requirements.

Unfortunately, our survey does not answer directly the relation of these mandated costs to infrastructure needs and investment. I expect that our future survey instruments will provide more data in support of this Committee's inquiry today. Last week the Conference, however, did release the results of a follow-up survey, linking costs of mandates to crime and violence, reflecting the immediacy of this concern.

I would also note that the National Association of Counties released a companion study, assessing the effects of 12 mandates on county governments.

Mr. Chairman, the survey results partially account for the effects of these federal directives and policies on local infrastructure investment decisions. Take the Clean Water Act and Safe Drinking Water Act requirements. Together, these represent roughly two-thirds or approximately $38 billion of the total projected spending for the ten mandates. We know what these laws require: they generally require new treatment systems. That is to say these mandates are driving net new additions to our local capital stock. To the extent local capital budgets are being driven to fund new treatment plants for our water or wastewater systems, it is displacing available investment capital to replace leaking sewers or water mains.

Shifting away from the broad discussion of the impact of mandates, let me provide a local example of what we are talking about. Just a few weeks ago, this area was operating under a notice requiring residents of the District of Columbia and many of the adjoining areas to boil their water. The Dalecarlia plant, which is unique in that it is operated by the U.S. Corps of Engineers, exceeded standards for turbidity, an indicator of the potential for microbial contamination in the delivery system. With last year's experience in Milwaukee, public officials were sensitive to this potential and issued the notice to ensure that in the event of contamination, which I understand did not occur, the public was protected.

Under the Safe Drinking Water Act, federal law is pushing communities to deploy new treatment and removal technologies to address this standard and others, with enforcement mechanisms to ensure that such mandated investments occur on schedule and in the form as set under the law and regulations. Some are now using this event, along with the system failure in Milwaukee, to advocate the need for increased requirements (i.e. more aggressive mandates and stronger enforcement provisions) on communities to address drinking water quality as if to say that local elected and appointed officials who oversee such systems are unmoved by real threats to their own families, friends and citizens.

Yet less than a month after this incident, the big freeze of 1994 brought devastation to communities across the country, rupturing water mains and disrupting service. District officials, struggling to maintain the integrity of the delivery system serving its customers amid a rash of water main failures, acknowledged the potential for nearly $1 billion in needed water main replacement and system improvements. There are no federal enforcement actions -- hammers so to speak -- to ensure that these investments are undertaken.

Under the Safe Drinking Water Act, we know that the "boxes," which are treatment facilities, either upgraded or new plants, come before the pipes. Federal law even sets the timeframe, which is often unrealistic, for construction.

I have talked about the environmental infrastructure and mandates. Mr. Chairman, you are very familiar with Philadelphia Mayor Ed Rendell's concerns about unfunded mandates and the relationship of these federal directives to his efforts to improve the condition of the City's infrastructure. This example speaks to the transportation infrastructure. Consider the application of the Americans with Disabilities Act (ADA) and the City of Philadelphia's efforts to restore rationality to a federal system that is out of phase with local realities and local determinations. In light of pending litigation claiming that the City should install curb ramps when the city resurfaces its streets, the City of Philadelphia originally asked Department of Justice officials to rule that resurfacing a street is not an "alteration" under ADA and its implementing regulations. An affirmative finding would require curb ramps at each intersection.

With federal officials refusing to issue an opinion on this matter, the City of Philadelphia has now petitioned a writ of certiorari with the U.S. Supreme Court to address what the lower courts' decided. The infrastructure consequences are clear, providing curb ramps effectively reduces the City's resurfacing budget by 30 percent. The irony of the Court's ruling is the City will be making curb ramps at intersections of streets that were selected for resurfacing, which has nothing to do with the community's ADA transition plan and where disabled citizens would like to see curb ramps installed first.

The installation of curb ramps at all of the City's intersections (approximately 40,000) would cost an estimated $135 million annually over three years, representing a total investment of approximately four times the City's annual capital budget.

Let me shift away from the issue of mandates and displacement of local resources and talk about the need to anticipate emerging constraints to increased infrastructure investment at the local level. At some point, we will confront widespread resistance from local taxpayers and rate payers, a reality that has already taken hold in many communities, as local officials continue to impose higher levies, rates and user charges to finance new and upgrade existing infrastructure. Local tax systems, which are the most regressive relative to our state and federal partners, are increasingly carrying a larger burden of maintaining and expanding the nation's infrastructure. We are starting to lose broad support for increases in rates and other charges, since our taxpayers of low- to moderate- incomes will be unable to carry indefinitely increased fee and charges for services. We have entered a period characterized by rising costs for all of our local systems -- wastewater, drinking water, solid waste, transportation, schools, etc. -- all of which are slated for systematically higher rates and charges. Some cities are starting to assess the synergistic effects of multiple systems competing simultaneously for the taxpayers' resources.

For many of the nation's largest cities, we have seen growth in poverty between 1980 and 1990. The numbers and the percentages of families in poverty already is defining the capacity of these city tax and user systems to keep pace with escalating demands and requirements for new facilities. Circumstances in these cities, particularly, explain why there several mayors are speaking out so forcefully about unfunded mandates and the need for federal action.

There are other trends as well that are adding complexity and delays that have the effect of driving up the costs of infrastructure projects and investments. Just last week I had the opportunity to meet with U.S. EPA Administrator Browner and U.S. Department of Transportation Secretary Peña, along with five other state and local elected officials to discuss the "conformity regulations" issued last November to implement the 1990 Clean Air Act amendments. It is troubling that we have a regulation of this significance where the only costs analysis that was performed dealt with the analytical methods, such as running the new models and monitoring protocols.

The State of Ohio, for example, now has roughly $2 billion in transportation investment that is caught under a new build or no build test to address NOx emissions. A portion of this investment was slated for my City to improve mobility and congestion and reduce other regulated emissions developed under earlier clean air efforts. The final regulations include a new transitional rule on NOx, an issue that was not included in the proposed rulemaking or in the statute, placing this substantial investment in our local and regional transportation infrastructure in jeopardy. In the City of Akron, we expect to achieve significant reductions in ozone and ozone precursors but in the process overall NOx emissions will rise .2 percent. We are temporarily at an impasse.

I also noted that there are numerous issues before this Committee and the Congress that exert substantial influence over the direction of infrastructure investment. For example, there are already two major environmental renewals -- Clean Water Act and the Safe Drinking Water Act -- awaiting House and Senate review and action. As you could see from the data in this testimony, these two statutes are controlling larger portions of city and county capital budgets.

In every proposal from the Administration and by senior Committee leaders in both the House and Senate, we see amendments to increase enforcement, to further empower citizen lawsuits and to recover larger fines and penalties. These are the tools of infrastructure policy over the next generation. They will set timetables, define investment and allocate public resources. When implemented, these and other proposals will create new impediments, litigation and delay. Our survey results show fairly dramatically that for many cities environmental policy is infrastructure policy.

Mr. Chairman, in the Subcommittee on Surface Transportation, there are more than 1,000 proposed demonstration projects, assumed to total roughly $30 billion, awaiting action this year or next. I assume that most of these are not rehabilitation projects, but rather new projects that will further add to the capital stock of the nation's infrastructure. Likewise, there is a proposal pending before the Subcommittee on the National Highway System, for now a mapping exercise, that does not define or answer legitimate issues about future needs and investment. I cite these examples, Mr. Chairman, just to provide further context to the active process of defining our future infrastructure requirements.

The Energy and Commerce Committee tomorrow will markup legislation establishing the interstate highway of the future, the information superhighway, with provisions that will effectively preclude city and county participation in designing the information highway needs of their communities. This massive investment in technology, ironically, holds enormous potential to improve the performance of local infrastructure, services and systems, which should be one of the animating features of this initiative.

Instead, the design of this "highway" focuses on meeting the needs of the telephone companies and other telecommunications firms, precluding a stop in a city or county once every 10-20 years to talk about a franchise that might satisfy some of the issues we are discussing here today.

Mr. Chairman, thank you for the opportunity to present this testimony in support of you and Members of this Subcommittee as you continue your efforts to evaluate and develop effective infrastructure strategies and policies. Please be assured that you can count on the support of the nation's mayors as you continue your work in this area.

83-681 216

Impact of Unfunded Federal Mandates on U.S. Cities

A 314 - City Survey

October 26, 1993

Price Waterhouse

Survey Research Center
1801 K Street, N.W.
Suite 901
Washington, DC 20006

Telephone 202 296 0800

Price Waterhouse

October 22, 1993

The Honorable Jerry Abramson, President
The United States Conference of Mayors
1620 Eye Street, N.W.
Washington, DC 20006

Dear Mayor Abramson:

This report summarizes our findings from the U.S. Conference of Mayors' Unfunded Federal Mandates Survey.

I. Background

The survey collected data on the costs incurred by cities to implement the following ten unfunded Federal mandates:

(1) Underground Storage Tanks
(2) Clean Water Act
(3) Clean Air Act
(4) Resource Conservation and Recovery Act
(5) Safe Drinking Water Act
(6) Asbestos Abatement
(7) Lead Paint Abatement
(8) Endangered Species Act
(9) Americans with Disabilities Act
(10) Fair Labor Standards Act

Background on the survey and these unfunded Federal mandates, provided to us by The U.S. Conference of Mayors, appears in Appendix A.

We received survey responses from 314 cities. Because larger cities tended to respond to the survey more often than smaller cities, the population represented by the 314 respondent cities is approximately one-half of the population among all cities with 30,000 or more residents.

The responses were key entered and 100 percent verified to create a computer database. While we did not audit the data reported by respondents, we did test the database to identify potential anomalies (e.g., detail not summing to reported total, unusual costs relative to the size of the city, etc.). We followed

up on potential anomalies by reviewing the supporting worksheets and documentation and, as necessary, through telephone contact with respondents.

Because only a sample of cities could respond to the survey, and because respondents could not always estimate the costs of all of the unfunded mandates, a simple total of the respondent data would understate the total cost of unfunded mandates. We therefore extrapolated the survey data to estimate the total cost of unfunded mandates to all cities. The extrapolation is based on the proportion of total population represented by those cities reporting costs. For example, if the population of those cities that could estimate the cost of a particular mandate is 50 percent of the total population of cities, we multiply the sample total costs by a factor of two to arrive at an estimate of national costs for that mandate. Our extrapolation is based on 1990 census figures for cities over 30,000 in population, and therefore excludes costs incurred by smaller cities.

II. Total Cost of Ten Unfunded Federal Mandates to Cities

Table 1 provides the estimated cost of unfunded Federal mandates to cities. The total estimated cost for 1993 is $6.5 billion. Estimated costs for the five years 1994 through 1998 total $54.0 billion. The three most costly unfunded Federal mandates in 1993 were the Clean Water Act ($3.6 billion), Solid Waste Disposal ($0.9 billion) and Safe Drinking Water Act ($0.6 billion).

Cities reported that unfunded Federal mandate costs consume an average of 11.7% percent of their locally raised revenues.

III. City-by-City Costs

Table 2 summarizes the 1993 unfunded Federal mandates costs reported by each respondent city. The table identifies those mandates for which the city reported 1993 data and the total costs reported by the city. Note that these data may understate costs for two reasons: (1) cities often could not estimate costs for some of the mandates, and (2) some cities could not estimate all of the costs for a mandate, for example reporting either staff costs or direct/indirect costs but not both.

IV. Other Analyses of Survey Results

The U.S. Conference of Mayors conducted additional analyses of the survey responses which we have included as appendices to this report. Appendix B presents an analysis of superfund costs, Appendix C summarizes comments provided by cities on the impact of unfunded Federal mandates, and Appendix D summarizes comments provided by cities on problems with unfunded Federal mandates.

* * * * *

We appreciate the opportunity to assist you in this effort. Should you have any questions, please do not hesitate to call Dr. Glenn Galfond at (202) 828-9057.

Yours very truly,

Price Waterhouse

Table 1

Estimated Costs of Unfunded Federal Mandates to Cities
(Hours and Costs in Thousands)

Mandates	Fiscal Year 1993				FY 94 - 98
	Estimated Annual Staff Hours (Excluding Overtime)	Estimated Annual Staff Costs	Estimated Annual Direct/ Indirect Budget Costs	Total Costs	Projected Total Costs
1. Underground Storage Tank Regulations (UST)	862	23,393	137,755	161,148	1,040,627
2. Clean Water Act (CWA)/Wetlands	57,378	1,185,549	2,426,984	3,612,533	29,303,379
3. Clean Air Act (CAA)	12,138	195,526	208,294	403,820	3,651,550
4. Solid Waste Disposal/RCRA	9,680	173,384	708,191	881,575	5,475,968
5. Safe Drinking Water Act (SDWA)	4,444	94,549	467,783	562,332	8,644,145
6. Asbestos (AHERA)	898	19,554	109,754	129,308	746,828
7. Lead Based Paint	374	7,875	110,342	118,217	1,628,228
8. Endangered Species	252	6,934	30,024	36,958	189,488
9. Americans With Disabilities Act	4,701	114,935	240,746	355,681	2,195,808
10. Fair Labor Standards Act (Exempt Employee & Other Costs)	1,227	22,765	189,358	212,123	1,121,524
TOTAL	91,954	1,844,464	4,629,231	6,473,695	53,997,545

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
(Page 1 of 11)

City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Anchorage, AK	22,514,856	X	X	X	X	X	X	X	X	X	X
Fairbanks, AK	499,400	X	X	X	X	X	X			X	X
Birmingham, AL	2,445,300	X	X	X	X	X	X	X	X	X	X
Gadsden, AL	373,000	X	X	X	X	X	X	X	X	X	X
Huntsville, AL	9,076,087	X	X	X	X	X	X	X	X	X	X
Fayetteville, AR	4,662,587		X		X		X			X	X
Fort Smith, AR	13,599,542	X	X	X	X	X	X	X	X	X	X
North Little Rock, AR	2,890,322	X	X	X	X	X	X	X	X	X	X
Phoenix, AZ	35,960,732	X	X	X	X	X	X	X			X
Scottsdale, AZ	4,663,962	X	X	X	X	X	X	X	X	X	X
Township of Gilbert, AZ	1,271,436	X	X	X	X	X	X	X	X	X	X
Tucson, AZ	10,239,452	X	X	X	X	X	X	X	X	X	X
Alhambra, CA	237,674	X	X			X				X	
Anaheim, CA	20,359,785	X	X	X	X	X	X	X	X	X	X
Antioch, CA	234,786	X	X	X	X	X	X	X	X	X	X
Bakersfield, CA	932,984	X	X		X	X	X				
Bell Gardens, CA	827,017	X	X	X	X	X	X	X	X	X	X
Berkeley, CA	5,575,910	X	X	X	X	X	X	X	X	X	X
Carson, CA	249,000	X	X	X	X	X	X	X	X	X	X
Cathedral, CA	208,635	X	X	X	X	X	X	X	X	X	X
Chino, CA	582,160	X	X	X	X	X	X	X	X	X	X
Culver City, CA	6,166,053	X	X	X	X	X	X	X	X	X	X
Cypress, CA	1,738,900	X	X	X	X	X	X	X	X	X	X
Encinitas, CA	999,827	X	X	X	X	X	X	X	X	X	X
Fremont, CA	1,677,103	X	X	X	X	X	X	X	X	X	X
Fresno, CA	11,106,446	X	X	X	X	X	X	X	X	X	X
Fullerton, CA	2,240,256	X	X	X	X	X	X	X	X	X	X
Garden Grove, CA	911,083	X	X	X	X	X	X	X	X	X	X
Gilroy, CA	3,376,773	X	X	X	X	X	X	X		X	X

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
(Page 2 of 11)

City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Irvine, CA	2,217,190	X	X	X		X	X	X	X	X	X
Lancaster, CA	225,700	X	X	X	X	X	X	X	X	X	X
Lompoc, CA	3,067,768	X	X	X	X	X	X	X	X	X	X
Los Angeles, CA	581,996,000	X	X	X	X	X	X			X	X
Manhattan Beach, CA	35,424	X	X			X	X	X	X		
Merced, CA	942,900	X	X	X		X	X	X		X	X
Milpitas, CA	1,619,200	X	X	X	X	X	X	X	X	X	X
National City, CA	4,343,361	X	X	X	X	X			X	X	X
Newark, CA	577,340	X	X	X	X	X	X	X	X	X	X
Newport Beach, CA	1,629,090	X	X	X	X	X	X	X	X	X	X
Orange, CA	2,334,145	X	X	X	X	X	X	X	X	X	X
Oxnard, CA	2,673,658	X	X	X	X	X	X	X	X	X	X
Palm Springs, CA	1,267,113	X	X	X	X	X	X	X	X	X	X
Pico Rivera, CA	231,940	X	X	X	X	X	X	X	X	X	X
Pleasanton, CA	1,385,880	X	X	X	X	X	X	X	X	X	X
Redwood City, CA	919,009	X	X		X	X					X
Riverside, CA	4,360,950	X	X	X	X	X	X	X	X	X	X
Rohnert Park, CA	275,988	X	X	X	X	X	X	X	X	X	X
San Bernardino, CA	30,627,618	X	X	X	X	X	X	X	X	X	X
San Diego, CA	58,041,395	X	X	X		X	X	X	X	X	X
San Francisco, CA	165,415,802	X	X	X	X	X	X	X	X	X	X
San Leandro, CA	1,454,955	X	X	X	X	X	X	X	X	X	X
San Marcos, CA	811,810	X	X	X	X	X	X	X	X	X	X
Santa Barbara, CA	1,089,209	X	X	X	X	X	X	X	X	X	X
Santa Cruz, CA	2,589,120	X	X		X	X	X	X	X	X	X
Santa Monica, CA	4,750,605	X	X	X	X	X	X		X	X	X
Simi Valley, CA	2,257,070	X	X	X	X	X	X	X	X	X	X
South Gate, CA	1,960,000	X	X							X	X
Stockton, CA	1,560,595	X	X	X	X	X	X	X	X	X	X

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
(Page 3 of 11)

City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Sunnyvale, CA	1,703,000		X	X						X	
Temple, CA	359,931	X	X	X	X	X	X	X	X	X	X
Tustin, CA	450,787	X	X	X	X	X	X	X	X	X	X
Upland, CA	990,056	X	X		X	X				X	
Vallejo, CA	4,429,340	X	X	X	X	X	X	X	X	X	X
Victorville, CA	804,885	X	X	X	X		X		X	X	X
Visalia, CA	1,537,186	X	X	X	X	X	X	X	X	X	X
Westminster, CA	919,009	X	X		X	X					X
Arvada, CO	2,942,000	X	X	X	X	X				X	
Aurora, CO	609,000	X	X			X			X	X	X
Colorado Springs, CO	13,360,501	X	X	X	X	X		X	X	X	X
Lakewood, CO	903,065	X	X	X	X	X	X	X	X	X	X
Thornton, CO	254,130	X	X	X	X	X	X	X	X	X	X
Bridgeport, CT	3,262,429	X	X	X							
Fairfield, CT	612,212	X	X	X	X	X	X	X	X	X	X
Hamden, CT	125,360		X		X		X	X			
Middletown, CT	148,145	X	X	X	X	X	X	X	X	X	X
Norwalk, CT	6,440,349	X	X	X	X	X	X	X	X	X	X
Shelton, CT	2,115,395	X	X	X	X	X	X	X	X	X	X
Torrington, CT	1,880,936	X	X	X	X	X	X	X	X	X	X
Waterbury, CT	8,624,470	X	X	X	X	X	X	X	X	X	
Baco Raton, FL	5,408,406	X	X	X	X	X	X	X	X	X	X
Boynton Beach, FL	10,633,198	X	X		X	X	X	X	X	X	X
Cape Coral, FL	5,729,602		X			X	X	X	X	X	
Coral Springs, FL	1,187,732	X	X	X	X	X	X	X	X	X	X
Fort Lauderdale, FL	7,645,700	X	X	X	X	X	X	X	X	X	X
Fort Pierce, FL	865,747	X	X	X	X	X	X	X	X		
Gainesville, FL	4,056,984	X	X	X	X	X	X		X		X
Hollywood, FL	18,658,071	X	X	X	X	X	X	X	X	X	X

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
(Page 4 of 11)

City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Jackson, FL	6,613,861	X	X	X			X			X	X
Lauderhill, FL	274,583	X	X	X	X	X	X	X	X	X	X
Melbourne, FL	964,337	X	X	X	X	X	X	X	X	X	X
Miami, FL	2,305,600	X	X				X			X	
North Miami, FL	36,522	X	X	X	X	X	X	X	X	X	X
Orlando, FL	8,636,179	X	X	X	X	X	X	X	X	X	X
Pompano Beach, FL	307,350	X	X	X	X	X	X	X	X	X	X
Sarasota, FL	1,271,839	X	X		X	X	X	X			
Tamarac, FL	296,400	X		X			X	X	X		
Tampa, FL	8,962,562	X	X	X	X	X	X	X		X	X
Athens-Clark, GA	2,184,222	X	X	X	X	X	X		X	X	X
Atlanta, GA	48,597,174	X	X	X	X	X	X	X	X	X	
Augusta, GA	1,940,647	X	X	X	X	X	X	X	X	X	X
East Point, GA	2,674,166	X	X		X	X	X	X		X	X
Macon, GA	5,781,049	X	X	X	X					X	X
Savannah, GA	2,999,752	X	X	X	X	X	X	X	X	X	X
Smyrna, GA	265,404		X		X	X				X	X
Valdosta, GA	257,590		X			X					
Hilo, HI	1,343,000	X	X	X		X	X	X	X	X	X
Boise, ID	3,057,287	X	X	X	X			X	X	X	X
Addison, IL	102,300		X		X	X	X			X	X
Arlington Height, IL	622,770	X	X	X	X	X	X	X	X	X	X
Bloomington, IL	1,105,926				X		X	X			
Chicago, IL	70,822,000	X	X	X	X	X	X				
Chicago Heights, IL	39,386	X				X		X			
DeKalb, IL	836,970	X	X	X	X	X	X	X		X	X
Decatur, IL	242,455	X	X	X		X	X			X	
Elk Grove, IL	79,296	X	X	X	X	X	X	X	X	X	X
Hanover Park, IL	156,472	X	X	X	X	X	X	X	X	X	X

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
(Page 5 of 11)

City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Highland Park, IL	324,321	X				X				X	
Moline, IL	863,511	X	X	X	X	X	X	X	X	X	X
Niles, IL	1,118,000	X	X	X	X	X	X	X	X	X	X
North Chicago, IL	92,510	X	X	X	X	X	X	X	X	X	X
Northbrook, IL	154,215	X	X	X	X	X	X	X	X	X	X
Orland Park, IL	2,059,844	X	X	X	X	X	X	X	X	X	X
Palatine, IL	1,144,025	X	X	X	X	X	X	X	X	X	X
Quincy, IL	3,300,936	X	X	X	X	X	X	X	X	X	X
Rock Island, IL	1,156,557	X	X	X		X	X		X	X	X
Rockford, IL	339,439	X			X	X	X	X	X	X	X
Schaumburg, IL	3,407,121	X	X	X	X	X	X	X	X	X	X
Skokie, IL	715,049	X	X	X	X	X	X	X	X	X	X
Urbana, IL	328,000	X	X	X	X	X	X	X	X	X	X
Anderson, IN	6,831,940	X	X	X	X	X	X	X	X	X	X
Columbus, IN	1,382,719	X	X	X	X		X	X	X	X	X
Elkhart, IN	2,162,928	X	X	X	X	X			X	X	X
Fort Wayne, IN	5,837,492	X	X	X	X	X	X	X	X	X	X
Hammond, IN	1,051,701	X	X	X		X	X	X	X		
Lafayette, IN	132,000	X			X		X			X	
Mishawaka, IN	162,447	X	X			X	X	X		X	X
South Bend, IN	2,751,150	X	X	X	X	X	X		X	X	
Terre Haute, IN	151,585	X				X	X	X			
Sioux City, IO	3,432,750	X	X	X	X	X	X	X	X	X	X
Waterloo, IO	879,800	X	X	X	X	X	X	X	X	X	
West Des Moines, IO	187,451	X	X	X	X	X		X	X	X	
Olathe, KS	217,600	X	X	X	X	X	X	X	X	X	X
Overland Park, KS	1,834,725	X	X	X						X	X
Topeka, KS	1,685,310	X	X	X	X	X	X	X	X	X	X
Wichita, KS	509,779	X		X			X	X		X	

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
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City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Covington, KY	254,450	X	X	X	X	X	X	X	X	X	X
Louisville, KY	14,590,540	X	X	X	X	X	X	X	X	X	X
Alexandria, LA	1,062,688	X	X	X	X	X	X	X	X		X
Baton Rouge, LA	78,590,067	X	X	X		X	X	X	X		
Houma, LA	7,648,583	X	X	X	X	X	X	X	X	X	X
Lafayette, LA	3,669,189	X	X		X		X		X	X	X
New Iberia, LA	2,271,425	X	X	X	X	X	X	X	X	X	X
New Orleans, LA	3,446,900				X						
Shreveport, LA	950,019		X			X	X	X	X	X	X
Boston, MA	4,554,960	X	X	X		X	X	X	X	X	
Brockton, MA	3,479,641	X	X	X	X	X			X		
Everett, MA	970,561	X		X		X	X				X
Haverhill, MA	1,293,193	X	X		X	X	X	X	X	X	X
Holyoke, MA	2,677,540	X	X	X	X	X	X	X	X	X	X
Lynn, MA	17,812,010	X	X	X	X	X	X	X	X	X	X
Springfield, MA	14,631,448	X	X	X	X	X	X	X		X	X
Worcester, MA	2,572,528	X	X		X	X		X		X	X
Baltimore, MD	83,712,370	X	X	X	X	X	X	X	X	X	X
Frederick, MD	98,366	X	X	X		X			X	X	X
Hagerstown, MD	6,157,683	X	X		X	X	X	X	X	X	X
Rockville, MD	1,021,901	X	X	X	X	X	X	X	X	X	X
Lewiston, ME	1,629,613	X	X		X	X			X	X	
Allen Park, MI	950,493	X	X	X	X	X	X	X	X	X	X
Bay City, MI	4,097,212	X	X	X	X	X	X	X	X	X	X
Farmington Hills, MI	530,000	X			X	X				X	X
Flint, MI	18,105,718	X	X	X	X	X	X	X	X	X	X
Garden City, MI	403,750	X	X	X	X	X	X	X	X	X	X
Grand Rapids, MI	38,907,000	X	X	X	X	X	X	X	X	X	X
Inkster, MI	158,296	X	X	X	X	X	X	X	X		X

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
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City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Jackson, MI	275,667	X	X	X	X	X	X	X	X	X	X
Kalamazoo, MI	11,607,680	X	X	X		X	X	X		X	
Midland, MI	312,572	X	X		X	X		X		X	X
Rochester Hills, MI	1,141,888	X		X	X		X	X		X	X
Romulus, MI	1,691,850	X	X		X	X	X		X	X	X
Royal Oak, MI	5,668,980	X	X	X	X	X	X			X	X
Saginaw, MI	44,673,892		X	X	X		X			X	X
Sterling Heights, MI	2,299,583	X	X	X	X	X	X	X	X	X	X
Warren, MI	13,028,332	X	X	X	X	X	X	X	X	X	X
Brooklyn Park, MN	1,029,630	X	X	X	X	X	X			X	X
Fridley, MN	161,754	X	X	X	X	X		X	X		X
St. Paul, MN	20,113,345	X	X	X	X	X	X	X	X	X	X
Columbia, MO	930,132	X	X	X	X	X	X	X	X	X	X
Independence, MO	1,366,002	X	X	X	X	X	X	X			X
Jefferson City, MO	394,173	X	X	X	X	X	X	X	X	X	X
St. Charles, MO	333,342	X		X	X	X			X	X	X
St. Joseph, MO	448,195	X	X	X	X	X	X	X	X	X	X
St. Louis, MO	4,180,000	X	X	X	X	X	X	X	X	X	X
University City, MO	132,880	X	X	X	X	X	X	X	X	X	X
Jackson, MS	1,948,691	X	X	X	X	X	X	X	X	X	X
Meridian, MS	1,492,325	X	X	X	X	X	X	X	X	X	X
Missoula, MT	29,622	X			X	X	X	X	X	X	X
Burlington, NC	1,621,928	X	X	X	X	X	X	X		X	X
Charlotte, NC	6,139,538	X	X	X	X	X	X		X	X	X
Durham, NC	2,571,813	X	X	X	X	X	X	X	X	X	X
Greensboro, NC	6,166,223	X	X	X	X				X	X	X
Greenville, NC	3,266,256	X	X	X	X	X	X	X	X	X	X
Rocky Mount, NC	2,584,174	X	X	X	X	X	X	X	X	X	X
Winston-Salem, NC	4,925,780	X	X	X	X	X	X	X	X	X	X

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
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City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Nashua, NH	763,555	X	X	X	X	X	X	X	X	X	X
Bridgewater, NJ	296,550	X	X	X	X	X	X	X	X	X	X
Camden, NJ	3,343,980	X	X	X	X	X	X	X			
Hamilton Township, NJ	424,786	X	X	X	X	X	X	X	X	X	X
Jersey City, NJ	11,363,163	X	X	X	X	X	X	X	X	X	X
Lakewood Township, NJ	83,459	X	X	X	X	X	X	X	X	X	X
New Brunswick, NJ	768,000	X		X		X	X			X	
Union City, NJ	11,250	X	X	X	X	X	X		X		
Vineland, NJ	3,638,052	X	X	X	X	X	X	X	X	X	X
Santa Fe, NM	2,565,856		X	X	X		X		X		X
Carson, NV	4,015,117	X	X		X	X	X			X	
Grand Island, NV	1,687,670	X	X	X	X	X	X		X		
Lincoln, NV	9,281,816	X	X	X	X	X	X	X	X	X	X
North Las Vegas, NV	1,379,243	X	X	X	X	X	X	X	X	X	X
Albany, NY	3,130,275	X	X		X	X	X	X	X	X	X
Auburn, NY	29,143,950	X	X		X		X			X	
Brighton, NY	15,300	X	X	X	X	X	X	X	X	X	
Elmira, NY	1,331,297	X	X	X	X	X	X	X	X	X	X
Mount Vernon, NY	246,200	X	X	X		X			X	X	X
New York City, NY	475,645,900	X	X	X	X	X				X	X
North Tonawanda, NY	61,830	X	X	X	X	X	X	X	X	X	X
Syracuse, NY	3,730,160			X	X	X	X				
White Plains, NY	4,374,260	X	X	X	X	X	X	X	X	X	X
Akron, OH	21,007,800	X	X	X	X	X	X	X	X	X	X
Chillicothe, OH	470,067	X	X		X	X		X		X	X
Cincinnati, OH	20,256,942	X	X	X	X	X	X	X		X	X
Cleveland, OH	12,243,616	X	X	X	X	X	X	X	X	X	X
Cleveland Heights, OH	1,043,425	X			X		X	X		X	X
Columbus, OH	65,860,429	X	X	X	X	X	X	X	X	X	X

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Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
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City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Cuyahoga Falls, OH	1,377,299	X	X		X	X	X	X	X	X	X
Dayton, OH	5,979,468	X	X	X	X	X	X	X		X	
Lima, OH	1,278,901	X	X	X	X	X				X	X
Lorain, OH	349,940		X	X	X	X	X	X	X	X	X
Springfield, OH	1,771,065	X	X	X	X	X	X		X		
Toledo, OH	37,719,726	X	X	X	X	X	X				
University Heights, OH	120,771	X	X	X	X	X	X	X	X		X
Youngstown, OH	3,722,760	X	X		X		X			X	
Broken Arrow, OK	555,789	X	X	X	X	X	X	X	X	X	X
Lawton, OK	752,348	X	X		X	X	X	X	X	X	X
Moore, OK	373,661	X	X	X	X	X	X	X	X	X	X
Norman, OK	1,310,500	X	X	X	X	X	X	X	X	X	X
Oklahoma City, OK	1,391,584	X	X	X						X	
Tulsa, OK	28,935,289	X	X	X	X	X	X	X		X	X
Gresham, OR	728,566	X	X		X	X				X	X
Lake Oswego, OR	1,051,100	X	X	X	X	X	X	X	X	X	X
Springfield, OR	747,652	X	X	X	X	X	X	X	X	X	X
Allentown, PA	1,983,672	X	X	X	X	X	X	X	X	X	X
Altoona, PA	4,000,000					X					
Philadelphia, PA	6,724,912	X	X	X	X	X		X			X
Pittsburgh, PA	3,196,133	X	X	X		X	X	X		X	X
Wilkes-Barre, PA	342,156	X	X	X	X	X	X		X	X	X
York, PA	880,724	X	X	X	X	X	X	X	X	X	X
Cranston, RI	1,315,776	X	X	X	X	X	X	X		X	X
Providence, RI	225,573	X	X	X	X	X	X	X	X	X	X
Columbia, SC	6,091,558	X	X	X	X	X	X	X	X	X	X
Rock Hill, SC	2,150,435	X	X	X	X	X	X	X	X	X	X
Rapid City, SD	574,545	X	X	X	X	X	X	X	X	X	X
Chattanooga, TN	9,924,342	X	X	X	X	X	X	X	X		X

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
(Page 10 of 11)

City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Kingsport, TN	1,144,840	X	X	X	X	X	X	X	X	X	X
Knoxville, TN	1,549,116	X	X	X	X	X	X	X	X	X	X
Amarillo, TX	27,092,500	X	X	X	X	X	X	X	X	X	X
Arlington, TX	11,109,045	X	X	X	X	X	X	X	X	X	X
Austin, TX	8,452,992	X	X	X	X	X	X	X	X	X	
Beaumont, TX	3,485,816	X	X		X	X	X	X	X	X	X
Brownsville, TX	1,633,435	X	X	X	X	X	X	X	X	X	X
Bryan, TX	984,284	X	X		X	X		X		X	X
Carrollton, TX	3,838,095	X	X	X	X	X	X	X	X	X	X
Corpus Christi, TX	5,674,303	X	X	X	X	X	X	X	X	X	X
Dallas, TX	20,000,758	X	X	X	X	X	X	X	X	X	X
El Paso, TX	26,697,500	X	X	X		X	X	X	X	X	X
Fort Worth, TX	12,426,460	X	X	X	X	X	X	X	X	X	X
Garland, TX	2,803,000	X	X	X	X	X	X	X	X	X	X
Grand Prairie, TX	4,263,036	X	X	X	X	X	X	X	X	X	X
Houston, TX	154,326,169	X	X	X	X	X	X	X	X	X	X
Irving, TX	500,700	X		X	X	X	X	X	X	X	X
Laredo, TX	3,756,234	X	X	X	X	X	X	X	X	X	X
Lubbock, TX	11,199,789	X	X	X	X	X	X	X	X	X	X
Lufkin, TX	361,109	X	X		X	X					X
Mesquite, TX	1,620,821	X	X	X	X		X	X	X	X	X
Nacogdoches, TX	1,257,564		X	X	X	X	X			X	X
Odessa, TX	2,345,745	X	X		X	X				X	X
Plano, TX	6,642,015	X	X	X	X	X	X	X		X	X
Port Arthur, TX	1,696,990	X	X	X	X	X	X	X	X	X	X
San Marcos, TX	1,266,133	X	X	X	X	X	X		X	X	X
Sherman, TX	789,995	X	X	X	X	X	X	X	X	X	X
Waco, TX	2,894,039	X	X	X	X	X	X	X	X	X	
Wichita Falls, TX	332,987	X	X	X	X	X	X	X	X	X	X

Table 2
FY93 Cost of Unfunded Federal Mandates to Cities
(Page 11 of 11)

City, State	Total Costs for FY93	Mandates for which Costs are Reported									
		1	2	3	4	5	6	7	8	9	10
Murray, UT	472,000	X	X	X	X	X	X	X	X	X	X
Orem, UT	489,683	X	X	X	X	X	X	X	X	X	X
Provo, UT	1,838,051	X	X	X	X	X	X	X		X	X
Salt Lake City, UT	21,522,239	X	X	X	X	X	X	X	X	X	X
West Valley, UT	465,575	X	X	X	X	X	X	X	X	X	X
Alexandria, VA	7,180,451	X	X	X	X	X	X	X	X	X	X
Chesapeake, VA	8,335,675	X	X	X	X	X	X	X	X	X	X
Danville, VA	5,533,165	X	X	X	X	X	X	X	X	X	X
Hampton, VA	2,394,916	X	X	X	X	X	X	X	X	X	X
Norfolk, VA	8,974,881	X	X	X	X	X	X		X	X	X
Portsmouth, VA	8,237,042	X		X	X		X		X	X	X
Suffolk, VA	3,845,322	X	X	X	X	X	X	X		X	X
Virginia Beach, VA	11,304,851	X	X	X	X		X	X	X	X	X
Montpelier, VT	189,336	X	X	X	X	X		X	X	X	X
Kennewick, WA	4,252		X				X	X		X	
Redmond, WA	474,669	X	X	X	X	X	X	X	X	X	X
Seattle, WA	2,487,000	X								X	X
Appleton, WI	1,148,944	X	X	X	X	X	X			X	X
Greenfield, WI	241,645	X			X		X			X	
Madison, WI	1,851,764	X	X	X	X	X	X	X	X	X	X
Racine, WI	2,635,000	X	X	X	X	X	X	X	X	X	
Wauwatosa, WI	1,078,600	X	X	X	X	X	X	X	X	X	X
Wheeling, WV	52,575	X	X	X	X	X	X	X	X	X	X
Cheyenne, WY	3,036,852	X	X	X	X	X	X	X	X	X	X

APPENDIX A
SURVEY BACKGROUND

Resolution

Mayors meeting this summer in New York City for the 61st Annual Conference of Mayors adopted a resolution calling on Congress and the President "to oppose any regulation, policy proposal or legislative bill which mandates programs and responsibilities on state and local governments without full federal funding." The resolution, submitted by Philadelphia Mayor Edward Rendell, also called on Congress and the President "to perform risk assessment and cost-benefit analyses on all legislation which requires mandates on state and local governments."

Over the past decades Washington has produced dozens of pieces of legislation creating hundreds of costly regulations which must be satisfied by state and local governments. According to the U.S. Advisory Commission on Intergovernmental Relations, 22 statutes imposing new regulations on states and localities or significantly expanding programs were enacted during the 1970s; during the 1980s, 27 such statutes were added. And during the 1980s, the ACIR reports, Congress also attached new conditions to many existing grant programs.

The costs of implementing the regulations imposed by all of this legislation have not been assumed by the federal government; instead, the costs have been passed down to the local level. Washington's practice of imposing, but not funding, costly mandates on local governments, coupled with the dramatic cuts made in federal urban aid over the past decade, has added significantly to the already serious financial problems of these governments.

Research

A few recent studies of the impact of unfunded mandates reflect the magnitude of the problem.

- In 1992, nine cities in Ohio -- including Cleveland, Columbus and Akron -- published a joint report documenting the costs they would be forced to pay over the next 10 years to meet federal environmental mandates. The total in 1992 dollars was $2.85 billion, or approximately $2,136 per household. The City of Columbus reported that by 1996, compliance with environmental mandates is projected to require 23.1 percent of its total budget.

- A 1992 study by the City of Chicago indicated that the City would spend over $95 million that year for capital improvements required by federal and state environmental mandates. More than 45,000 staff hours would be consumed. Chicago estimates that between 1992 and 1995, $319,240,373 will be expended on unfunded environmental mandates alone.

- The Municipality of Anchorage estimated that for the period 1991-2000, costs of existing federal environmental regulations would total $429,936,737. Its January 1993 report stated that Clean Water Act compliance would be the most expensive for Anchorage, accounting for 36 percent of real and projected costs.

- A July 1993 report by the ACIR states that good data on the cumulative financial costs of federal regulations imposed on state and local governments is not available. The best estimates, from the Congressional Budget Office, indicate that new regulations enacted between 1983 and 1990 imposed cumulative costs of between $8.9 and $12.7 billion on states and localities, depending on the definition of mandates used. These estimates are acknowledged to be approximate and generally conservative.

National Unfunded Mandates Day

The resolution adopted by the mayors in June also called for a "National Unfunded Mandates Day," a day on which mayors of all cities would conduct simultaneous press conferences in their city halls to heighten awareness of the tremendous costs the unfunded mandates were imposing on city residents. The resolution directed the President of the Conference of Mayors to appoint a committee to plan for "NUM-Day" and to coordinate with other associations representing local government.

On July 20, in a press conference in Chicago's City Hall, the President of the Conference, Louisville Mayor Jerry Abramson, announced that Chicago Mayor Richard Daley would chair the National Task Force on Unfunded Federal Mandates; vice chairs named by Abramson were Mayors Rendell of Philadelphia, Richard Riordan of Los Angeles, Greg Lashutka of Columbus, and Wellington Webb of Denver.

Survey

One week later, Abramson announced that Price Waterhouse had been selected by the Conference to report to the nation in the fall on the costs of unfunded federal mandates. The mayors had determined that any effort to call attention to the federal mandate problem and gain popular support for legislation to end unfunded mandates -- such as that introduced by Idaho's Senator Dirk Kempthorne, the former Mayor of Boise, and sponsored in the House by California Representative Gary Condit -- would have to be supported by national data on the actual costs of the mandates to local taxpayers. Price Waterhouse was selected from among several major accounting and auditing firms to work with the Conference on the design and conduct of a survey of the more than 1,000 U.S. cities with populations over 30,000 (i.e., those served by the Conference).

On August 12, in a press conference in Washington, leaders of four organizations representing local governments nationwide -- the Conference, the National League of Cities, the National Association of Counties and the International City/County Management Association -- announced that National Unfunded Mandates Day would be Wednesday, October 27. They also announced that the National Association of Counties

would be working with Price Waterhouse in a survey of mandate impact in counties across the nation, and that the county survey would be released along with the Conference's survey of cities prior to October 27.

On August 20, a letter to mayors from Mayors Abramson and Daley informed them of the October 27 date for NUM-Day and asked them to participate in the Conference's survey on unfunded mandate impact. The letter clarified the purpose of NUM-Day and the survey: "It is important to understand that mayors have not come out in opposition to the goals of all of the mandates; most are worthy goals for this nation. But what mayors have been saying, and will continue to say, is that the Congress should no longer be handing down mandates without money, no longer dictating local spending priorities through their mandates."

Because survey response time available to the cities would be limited, only 10 mandates were selected for study. It was believed that most cities would be able to assemble some data on many, if not all, of the 10 in time to meet the survey deadline. The survey covered Underground Storage Tanks, the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act, the Safe Drinking Water Act, Asbestos Abatement, Lead Paint Abatement, the Endangered Species Act, the Americans with Disabilities Act, and the Fair Labor Standards Act.

The survey called for three basic types of information: first, cost information for each of the federal mandates selected for study; second, related information on the problems created by the mandates and on the programs and services the city has had to forego because of the local resources absorbed by the mandates; and third, for those cities which have been named "potentially responsible parties" in Superfund clean-up costs, data on legal and other costs incurred.

For each mandate in the survey, city officials were asked to provide:

- An all-inclusive estimate of the hours city employees spent in Fiscal Year 1993 in any function related to compliance, and for the costs that those hours represented. Respondents were instructed to keep separate any overtime hours for employees considered to be exempt from the Fair Labor Standards Act -- professional, executive or administrative -- and to report those under FLSA.

- An estimate of all direct and indirect costs incurred in Fiscal Year 1993 across all departments for any function related to compliance. This could include office supplies, postage, contractual services, equipment amortization, printing, conferences and travel, training, computer maintenance, workers' compensation, liability insurance, outside attorneys' fees, consultants' fees, staff overtime, compensatory time under FLSA, etc.

- A projection of total costs, capital and operating, for Fiscal Years 1994 through 1998. For this period, the annual inflation rate projected by the Congressional Budget Office is 2.7 percent.

While the total costs calculated by cities were to include both operating and capital costs, these two basic cost categories were not broken out in the survey. It is important to recognize that federal mandates require significant capital spending. In the City of Louisville, for example, the mandates reported cost $11,882,340 in 1993 operating funds plus $2,708,200 in capital expenditures. In Cleveland, the mandates required $5,840,616 in operating funds plus $6,403,000 in capital expenditures. In Beaumont it was about $3,026,000 in operating costs and $460,000 in capital costs.

Description of Unfunded Federal Mandates Included in Survey

The survey collects cost data on the following ten unfunded mandates:

(1) *Underground Storage Tanks* -- The federal Underground Storage Tank law regulates tanks which store petroleum and hazardous substances, preventing, detecting and correcting damage done by leaks and spills. Many local governments are required to regulate tanks in their jurisdictions and also are responsible for tanks they own and operate.

(2) *Clean Water Act* -- This federal statute regulates discharges into navigable waters, setting standards for improving and maintaining water quality, regulating and requiring permits for point source discharges, and controlling discharges to public waters by Publicly Owned Treatment Works and direct discharges by industry. It requires sewerage authorities to assume a wide range of responsibilities.

(3) *Clean Air Act* -- This is the primary federal statute governing air emissions from stationary and mobile sources, setting air quality standards, requiring state implementation plans in which local governments must participate, and requiring permits for all major sources of pollution. For those cities in non-attainment areas it requires that a number of corrective activities be undertaken.

(4) *Resource Conservation and Recovery Act* -- Enacted in 1976 as the primary federal statute regulating solid and hazardous waste, RCRA completely replaced the Solid Waste Disposal Act of 1965 and supplemented the Resource Recovery Act of 1970. RCRA itself was substantially amended by the Hazardous and Solid Waste Amendments of 1984.

(5) *Safe Drinking Water Act* -- The primary statute regulating drinking water standards, the Act establishes maximum levels for contaminants which are known to occur in public water systems, certifies appropriate analytical techniques, specifies appropriate treatment techniques and establishes public notification procedures, among other activities. It requires drinking water suppliers to assume a wide range of responsibilities.

(6) *Asbestos Abatement* -- There is a wide range of federal requirements for handling asbestos-containing materials (ACMs) in properties or buildings

undergoing rehabilitation or demolition, and for treating asbestos in school buildings. Regulations cover inspection, removal, transportation, disposal and worker exposure, among other areas.

(7) *Lead Paint Abatement* -- Under the Residential Lead-Based Paint Hazard Reduction Act of 1992 (Title X of the Housing and Community Development Act of 1992), local governments responsible for federally assisted housing must assess, inspect, reduce or abate lead hazards in such housing.

(8) *Endangered Species Act* -- This Act provides for the conservation, protection, restoration and propagation of species of fish, wildlife and plants facing extinction. Various federal agencies work to implement the Act by monitoring potential destruction of natural habitats by public or private sector projects in communities.

(9) *Americans with Disabilities Act* -- Title II of the ADA, which covers public services, (a) prohibits discrimination on the basis of disability in state and local government employment and services; (b) requires that all new buses be accessible and that supplementary paratransit services or other special transportation services be provided to individuals with disabilities who cannot use fixed-route bus services; (c) requires that all new rail vehicles and all new rail stations be accessible and that existing rail systems have one accessible car per train (by July 26, 1995), and that existing key stations in rapid rail, commuter rail and light rail systems also must be accessible, unless an extension is granted; and (d) requires that every local government with 50 or more employees designate an ADA coordinator and complete a self-evaluation, unless this was already done under Section 504, and complete a transition plan (by July 26, 1992).

(10) *Fair Labor Standards Act* -- FLSA establishes and sets the minimum wage and specifies a range of labor practices, including overtime compensation, for both the public and private sectors.

APPENDIX B
Superfund Costs to Cities

The U.S. Conference of Mayors analyzed the survey responses on superfund costs to cities. Following is a summary of the results.

The Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), popularly known as Superfund, holds any party that disposed of any waste in a Superfund site liable for its entire clean-up. This liability system -- known as strict, joint and several liability -- makes local governments liable for the clean-up of sites contaminated by industrial hazardous waste, even when the local government only disposed of normal household garbage at the site.

The liability structure of Superfund allows for corporations found liable for clean-up to sue local governments to recapture the cost of a portion of the site. The average cost of a Superfund site clean-up is $25-30 million, and local governments have become prime targets for recapturing clean-up costs.

Over 450 local governments have been sued by industrial polluters for sending regular household municipal solid waste and sewage sludge for landfills that eventually became Superfund sites. Local governments are liable for clean-up caused by industrial pollution whether the local government was a generator, transporter, owner or operator of a site at any time. Settlement costs can vary dramatically from city to city depending on whether the city serves as an owner/operator (with potentially large liability) or as a generator/transporter where settlements can be smaller if relatively small volumes of waste have been disposed at the site. Because municipal waste tends to be "generated" by cities in large volumes, even cities that do not own sites have been sued for millions of dollars for picking up their citizens' trash.

Cities were asked whether they had been notified by the Environmental Protection Agency that they were "potentially responsible parties," potentially liable for Superfund clean-up costs. Those that had been notified were asked for information on (1) the level of potential liability for which they were being sued; (2) the costs to date (legal, environmental consulting, city staff, etc.) they had incurred as a PRP; and (3) a description of the settlement, if the city had settled lawsuits with other PRPs or with the EPA.

Forty-nine of the cities responding to the survey indicated that they had been named as PRPs. Table A-1 summarizes their responses to the questions on potential liability, costs incurred and settlements.

In addition to the cities listed on the chart, seven cities indicated that while they were PRPs, their costs had not yet been incurred, had not yet been determined, or were otherwise not known. These cities: Chicago, IL; Ft. Pierce, FL; Knoxville, TN; Lafayette, IN; North Tonawanda, NY; Pico Rivera, CA; and Racine, WI.

Table B-1
Responses Regarding Superfund Costs

City	Liability	Cost Incurred	Settlement
Fairbanks, AK	$3.2 million	$4,000	$61,969 (proposed)
Phoenix, AZ	Site I: $60 million Site II: $30-60 million Site III: unspecified	Site I: $5-6 million Site II: $4-5 million Site III: less than $100,000	Site I: City filed suit against several PRPs and recovered approximately $29 million. Site II: City filed suit against one PRP and recovered $1 million plus 40% of future costs; may file against other PRPs in the future. Site III: none to date
Scottsdale, AZ	$1 million (est.)	$800,000 (est.)	$50,000 (The City is committed to pay this amount. The City received a groundwater clean-up project worth $35-50 mil- lion in settlement of claims against PRPs.)
Tucson, AZ		$3 million	
Antioch, CA	$100 million	$40,000	
Los Angeles, CA	Exposure is in the hundreds of millions.	tens of millions; Certain cost components are either confidential or not readily determinable	The City has reached several multi-million dollar settlements. Exact figures are confidential.
San Leandro, CA	$5 million +	$200,000+	
Santa Monica, CA	$50,000	$75,000	$50,000
Temple City, CA	$2 million +	$305,644	

Table B-1
Responses Regarding Superfund Costs

City	Liability	Cost Incurred	Settlement
Colorado Springs, CO (3 sites)	$110,000 (only one lawsuit to date)	$60,000 (est.)	$295,000 (one site)
Shelton, CT		$10,000 per year (ongoing for about six years)	
Torrington, CT		$2,500	
Boca Raton, FL		$20,000	
Fort Lauderdale, FL		$1 million +	
Orlando, FL		$13,042	$723
Sarasota, FL		$12,345	
Tampa, FL		$79,465	
Quincy, IL	$1,200,000	$350,000	
Bloomington, IN	$100 million	$5.5 million (mostly legal costs)	$100 million (Settlement with other PRP resulted in that party being responsible for clean-up of PCB sites.)
Columbus, IN		$416,059	
Lafayette, LA	$2 million		
Haverhill, MA	$5 million	$200,000	
Flint, MI		$2,000	$3,000 (This relates to PCB transformer oil disposed of at Rose Chemical in Missouri. This is a one-time payment to reduce further liability.)
Grand Rapids, MI	$15-20 million (est.)	$1.5-2.0 million	

Table B-1
Responses Regarding Superfund Costs

City	Liability	Cost Incurred	Settlement
Kalamazoo, MI	$8.5 million (est.)	$140,000 (1993 only)	$1.3 million (one of three sites)
Sterling Heights, MI		$5,000	
Warren, MI		$3 million	
Independence, MO			$18,767
Greensboro, NC	de minimus		
Greenville, NC		$7,140	
Jersey City, NJ	$3.1 million	$1.328 million	
Lakewood, NJ		$1.3 million	
Cleveland, OH	$10 million		
Dayton, OH	$39 million	$75,000	
Moore, OK	de minimus	$40,000	$6,100
Altoona, PA	$1.5 million (est.)	$1 million	
York, PA	$6 million	$2 million	$3 million
Chattanooga, TN	$1 million	$50,000	
Salt Lake City, UT	$1.1 million (We are currently being threatened with a suit by a PRP for this amount. However, EPA does not believe we are responsible, and we do not anticipate paying.)	$5 million	$85,000
Portsmouth, VA	$27-34 million	$45,000	

Table B-1
Responses Regarding Superfund Costs

City	Liability	Cost Incurred	Settlement
Suffolk, VA	$300,000	$1.2 million	
Madison, WI	$10-15 million	$983,000	$400,000

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APPENDIX C
IMPACT OF UNFUNDED FEDERAL MANDATES

For city governments throughout the nation, having to pay for unfunded federal mandates means that local revenues are not available for other programs and services that may be needed. The survey offered city officials an opportunity, open-ended, to give examples of the kinds of programs and services they have had to forego because of mandate costs, or that they would initiate or expand if local revenues did not have to be allocated to federal mandates.

The examples given by officials indicate that, more than any other area, cities' infrastructure has been sacrificed in several ways, and that police and fire service also has been limited. Most examples given fall into the following categories:

	# Cities
Infrastructure (in general)	135
Police and Fire Services	76
Water and Sewer Services	70
Streets	63
Community Services	56
Parks	55
Waste Services	28
Maintenance	31

Twenty-six of the cities commented that staff reductions were attributable to unfunded mandates; 20 said that tax increases were attributable.

Many of the survey respondents offered specific examples of programs and services foregone; many others offered general comments on the impact of the mandates.

Fairbanks, AK

Funds would be used to upgrade existing buildings, construct new buildings and hire additional personnel.

Gadsden, AL

Funds would be used to provide lower water and sewer rates, improved fire flows, additional water storage, main replacements and upgrades, and plant improvement.

Huntsville, AL

Funds would be used to provide training and development, increased emphasis on disaster mitigation and preparedness programs, maintenance of public facilities, and for upgrade, renovation and repair of utility facilities.

Fayetteville, AR

In order to correct sewer overflows we have had to divert tremendous amounts of local sales tax revenue that would have been used to overlay streets. We currently face a $16-20 million shortfall in the next five years. Approximately $10 million in sales tax will be used to correct sewer overflows in the next five years.

We have had to issue long-term debt, which has resulted in higher than desired water and sewer rates, and has made a pay-as-you-go plan for capital improvements virtually impossible.

North Little Rock, AR

Because of lead based paint, a water line had to be replaced rather than painted at an additional cost of $109,000. New water services and additional street and drainage projects could be done.

Gilbert, AZ

Refuse collection service has not been expanded to include roll-off refuse bins (20-40 cubic-yard containers).

Phoenix, AZ

Most of Phoenix's costs of unfunded federal mandates are borne by our enterprise fund departments, such as Water Services, Aviation, and Solid Waste. If local enterprise revenues did not have to be allocated to those unfunded federal mandates, amongst other things, lower water, sewer, and aviation rates might be charged to users/citizens. Also, debt could be reduced by using pay-as-you-go capital for some large projects instead of bond financing, and vehicle replacement purchases could be made on schedule.

If costs borne by our general fund departments did not have to be allocated to pay for unfunded federal mandates, police and fire staffing could be increased, our parks and streets could be better maintained, and social services could be increased. Almost all City of Phoenix departments have been asking for funds to implement new, improved or restored services for the last few years, but dollars have generally not been available.

Scottsdale, AZ

If local revenues did not have to be allocated to federal mandates, the City of Scottsdale would spend additional funds on 1) law enforcement, particularly in the downtown area and in bicycle patrols for city parks; on 2) additional positions in the parks department for teen programs during the summer and after school; and for 3) code enforcement.

Although Scottsdale has raised revenues to meet environmental mandates in a variety of ways, one unavoidable result of such mandates has been an increase in sewer and water rates. If mandates were federally funded, cities would hopefully be able to reduce utility rates.

Tucson, AZ

The City, in recent years, has eliminated all of its fleet replacement and delayed indefinitely purchase of replacement equipment, programs and items such as library and parks and recreation materials, and building and street maintenance. There has been a reduction in staff without a reduction in service levels while initiating new programs. A hiring freeze has been imposed and employees have been required to endure years without merit increases or pay adjustments. The City's general fund balance has decreased. The capital improvement program funded with recurring revenues has been substantially reduced. All of these delays and reductions have increased the City's maintenance costs and reduced productivity.

Anaheim, CA

The City's Public Works/Engineering Department is significantly impacted by federal mandates. Resources dedicated to achieving the Clean Air mandates have impacted essential programs. For example, capital projects have been delayed and street maintenance is behind schedule and under-funded. Also, the City's 835,000 square-foot convention center's recent expansion was impacted by the asbestos removal requirements. The necessary remediation increased the construction costs and delayed the completion date, and ultimately the City lost revenue from conventions and trade shows that were booked for the anticipated opening.

Berkeley, CA

Normal maintenance and capital improvements to buildings, ground and maintenance services would be affected, including funding for new library materials.

Personnel would have more time to provide written policies and procedures, supervisory training and employee counseling -- time to improve internal programs and services.

Carson, CA

Funds would be used to address local problems, such as graffiti abatement, business retention and security.

Chino, CA

Funds would be used to provide police protection.

Culver City, CA

Over the last three years the City of Culver City has cut $7.4 million in needed community services and 52 staff positions due to the impacts of both the recession, which has hit us hard in Southern California, and state budget actions diverting traditional local government revenues to balance the state budget. Funds diverted to federal mandates could have been used to continue some of the higher priority services which were cut from the budget.

In the case of EPA wastewater regulations, Culver City is facing over $30 million as its pro-rata share of upgrading the Los Angeles Hyperion Wastewater Treatment Plant to full secondary treatment. While the immediate cost impact is being distributed by the sale of bonds, resulting service costs have led to substantial rate increases in residential and commercial sewer users.

Encinitas, CA

Examples of projects receiving less funding and which would have been expanded include storm drainage improvements, streets and roads, bluff projects, park and beach improvements and maintenance levels.

Fremont, CA

1. Costs directly attributed to the Fair Labor Standards Act (FLSA) in 1992-93 are generally equivalent to two to three staff positions eliminated or persons laid off in 1993. In addition, the Fremont Police Department has had to cope with the closeout/attrition of 29 police officer positions since 1991, resulting in approximately 20 percent fewer police personnel to work in an environment of rising crime.

2. Work and resources devoted to federally mandated programs result in postponing local community preservation enforcement because not enough staff or resources are available to serve both federal and local needs. Postponed local services include the investigation of zoning and building code violations, recreation vehicle storage violations, and signage violations.

3. Resources to address the social service needs of a rapidly increasing population may be diverted to federally mandated requirements. Of particular concern are increasing numbers of the elderly, and the influx of immigrant populations to our city with attendant pressures of cultural misunderstanding.
4. Public works projects deferred or not considered for funding include undergrounding/bridging railroad crossings, a centralized city hall, a cultural arts center, and a sports complex.

Fresno, CA

Costs of closing the City's landfill without the federal mandates were estimated to be $10 million to $12 million. All costs are borne by the City's Solid Waste rate payer. Because the landfill is included as a Superfund site, the costs are estimated to be $35 million to $60 million, also to be borne by the rate payer.

Fullerton, CA

1. More time would be spent on planning, water conservation and reliability.

2. The additional overtime created by FLSA for firemen would be enough to fund five or six new safety employees for one year.

3. The City has had to reduce library hours, scale back community services programs and eliminate some programs.

Garden Grove, CA

We have been unable to expand our police force. Between state mandates, federal mandates, and the California economy, we have experienced reductions in staff, reductions in services, and reductions in the quality of services we can provide in general.

Gilroy, CA

Funds would be used for additional police officers, corporation yard expansion and reconstruction, beautification of medians on streets and downtown improvements.

Irvine, CA

Funds would be used for street landscape, facility rehabilitation and maintenance and additional police officers.

Los Angeles, CA

The cost of unfunded federal mandates has had a detrimental impact on the City's ability to provide essential services to the people of Los Angeles. City resources which are presently being used to comply with federal mandates would be used to hire and train more police, which is the City's first priority. The City would also dedicate these revenues toward overall enhancement of a variety of other public safety programs.

Next year, Los Angeles will be faced with a $200 million budget deficit. Use of mandate compliance funds would allow the City to forego across the board cuts in services, such as libraries, parks and street maintenance, and would avert impending lay-offs of hundreds of city employees. To the extent the City is unable to provide these critical services due to costly and ineffective federal mandates, the quality of life for all of our citizens is negatively impacted.

Lompoc, CA

Federal mandates regarding Underground Storage Tank regulations, the Americans with Disabilities Act, and the Fair Labor Standards Act (exempt employee and other costs) are all funded directly from the City's general fund. Since the City's police, fire and parks & recreation programs are funded directly and solely by our general fund, the money used to satisfy these federal mandates has a direct impact on our ability to implement needed programs and services in these areas. When preparing our current budget, our City Council was forced to deny an innovative proposal for a community policing program to address our City's increasing crime rates. It is also anticipated that our City may have to consider closure of one of our two fire stations during our next budget cycle due to inadequate General Fund revenues. If the City did not have to appropriate funds to satisfy unfunded federal mandates, we would apply these funds toward necessary public safety services.

Merced, CA

Our City recently cut 30.5 positions in order to balance our 1993-94 budget. For the next fiscal year, the City faces another $1.5 million shortfall which has yet to be funded. By our own estimates, we expect to incur $1.4 million in unfunded federal mandate expenditures in 1993/94. Clearly, if the City was not faced with these costs we would be in far better shape to balance our budget without sacrificing current service levels.

Milpitas, CA

Funds would be used for City Hall renovation, Sports Center modifications and upgrades, computer master plan improvements and increased library services.

National City, CA

In addition to the unfunded mandates from the state and federal government, the City of National City has faced pressures resulting from the economic recession and has for the past several years been required to reduce budgets and services. Without the need to fund mandates locally, these offsetting funds could have been applied toward solving this more pressing need.

Newark, CA

The City has been very hard hit by the combination of the recession, State of California property tax take-aways, and various unfunded mandates. Our total workforce has decreased from 207 in FY 90/91 to 175 in FY 93/94 -- a 16 percent loss. These are real positions, not paper allocations, lost through a combination of a hard hiring freeze and layoffs. As a result, police and fire services are at the lowest possible level. The City is no longer sending an officer to non-injury accidents, cold burglaries and many animal control calls. Emergency response times are being stressed. Also, the City is no longer providing street tree pruning or a regular program of curb and gutter repair. These are all basic, essential services which are

hurt by unfunded mandates. The City's annual $18 million budget is currently $500,000 out of balance. The mandates simply dig a deeper hole.

Orange, CA

Due to a poor Southern California economy, State of California reduction of City property tax revenues from $1.50 per $1,000 in assessed valuation to $1.00 per $1,000 in assessed valuation (which results in a decrease in actual property tax revenues from $11 million to $8.8 million), and state and federal mandates, the City of Orange, California has done the following:

1. Reduced the work week and pay of non-safety employees from 40 hours a week to 36 hours a week.

2. Closed all non-emergency City services on Fridays.

3. Reduced the work force by 16 percent.

4. Reduced library hours from 216 hours a week at four libraries to 63 hours at three libraries.

Oxnard, CA

Unfunded mandates have affected parks programs, recreation programs and library hours. They have also resulted in closing city offices every other Friday, reducing staffing in all departments, reducing staffing in our fire department, delaying capital improvement purchases and reducing the number of city departments.

Pico Rivera, CA

ADA requirements have significantly cut down the scope of certain park projects. Equipment purchases have been reduced as an offset against surface installation cost increases.

Riverside, CA

Funds would be used to expand library hours and services, provide additional recreation programs, increase the level of park maintenance and increase the level of tree trimming.

Rohnert Park, CA

Funds would be used for additional public safety personnel and replacement of vehicles and other equipment. User fees and other taxes have been increased to fund these programs.

San Bernardino, CA

Funds would have been used to increase police personnel, code enforcement personnel and senior programs and services.

There have been cuts in library service hours and community service centers hours. Tree trimming has been deferred; we are six years behind. We have

less park acreage than is required by the Park Master Plan, but do not have the funds to provide maintenance.

San Diego, CA

The City has unmet needs related to the acquisition of public safety equipment such as fire engines which have exceeded their preferred levels of usage. The City also has a growing backlog of deferred maintenance on various public facilities and its infrastructure.

San Francisco, CA

We would have:

- hired more police officers;
- provided more mental health and substance abuse services to homeless people;
- eliminated the cuts in swimming pool and library hours; and
- funded more job training programs.

Santa Monica, CA

If unfunded federal mandates were eliminated, increased police and fire services, locally initiated low income housing assistance and public works/parks development and maintenance would be high priorities for local community investment.

Simi Valley, CA

Funds would be used for implementation of a geo-based information system, which would aid developers and city residents and businesses by providing up-to-date demographic, geographic, and economic information.

More money would be made available for City housing programs, including affordable housing development incentives, housing rehabilitation, rental and first-time homebuyer assistance. While City funds are currently available for these programs, the impacts on staff caused by efforts to meet these mandates reduce the level of service to the public.

Stockton, CA

Funds would be used for preventive facility maintenance.

Temple City, CA

Although Temple City has not had to forego programs and services for fiscal year 93-94, the City has implemented across-the-board cuts for on-going service levels at current standards. The same cannot be said for upcoming fiscal years, which we will evaluate at the appropriate time.

Tustin, CA

The City is faced with the need for extensive replacement of the infrastructure of its aging water distribution and storage network. Funds expended to comply with federal mandates would otherwise be used for expanding or improving the water infrastructure, and would increase the reliability and quality of the City's water supply.

Upland, CA

Rates for utilities are rising so fast to meet mandates that there is no discretionary income to devote to police and fire services. ADA and stormwater regulations are taking funds directly from the general fund.

Vallejo, CA

Funds would be used for:

- maintenance and improvement of City facilities;
- social services to residents in need; and
- police services.

Victorville, CA

Funds would be used for improved street maintenance, traffic control, drainage maintenance, capital projects and for improving infrastructure.

Visalia, CA

The City has eliminated 41 position (10 percent of its employees). A department particularly hard hit was leisure services, which provides services and activities to adults, children, senior citizens, and special populations.

Colorado Springs, CO

The unfunded mandates have the direct and immediate impact of causing the City to raise taxes, utility fees and other fees to pay for them. Increasing taxes and fees for federally-mandated programs negatively impacts individual disposable income, and the City's ability to address local issues such as development and maintenance of infrastructure.

Lakewood, CO

Funds would be used to expand the current Capital Improvement Program to include more drainage and street improvements, development of city parks, addressing infrastructure needs and police protection.

Fairfield, CT

The direct result of these mandates is an increase in local taxes.

Hamden, CT

Funds would be used for paving roads, renovating town buildings, purchasing trucks and plowing equipment for Public Works, and for a new high school.

Norwalk, CT

1. The City has cut nearly 10 percent of its workforce over the past five years. Due to financial constraints we have been unable to add positions back in order to improve services to the public.

2. We have been unable to expand police protection services to the public.

3. Increased or improved education programs and services have been foregone.

4. City garbage collection has been reduced from twice per week to once per week.

Shelton, CT

Municipal state grants for education were cut by $4.1 million this year. Taxpayers could have used these funds to defray those additional costs to the City.

Torrington, CT

Funds would be used to:

- restore personnel cut from public works, police and fire departments; and

- increase the pace of automation of city accounting, tax collection and assessment functions.

Waterbury, CT

The hazardous material inspector and yearly household hazardous waste collection day required by the implementation of federal mandates means curtailing of city services such as paving of streets and sidewalk repairs.

Boca Raton, FL

Funds would be used to:

- enhance police services;

- provide more funding to youth services;

- provide more funding to the City's aging infrastructure; and

- maintain the City's facilities in a more timely manner.

Boynton Beach, FL

Additional basketball, tennis and racquetball courts in a park located in a low income neighborhood were not installed due to funds spent on gopher tortoise

relocation and scrub preservation. Additional economic development, social services and recreational programs could be offered if dollars were not spent on federal mandates. Employee discipline and morale are a problem due to FLSA requirements, and raises have been frozen.

Cape Coral, FL

We have no specific examples to list, although social service providers in the City can always use extra support.

Fort Lauderdale, FL

The $7.6 million spent to meet federal mandates equates to 153 police officers or 2.5 times the amount planned for recapitalization of existing infrastructure in FY 1994. If local revenues did not have to be allocated to satisfy federal mandates, our water and sewer rates would be adjusted down approximately 12 percent for FY 1993.

Fort Pierce, FL

Funds would be used for:

- road construction;
- sewer and water drainage;and
- consultant fees

Gainesville, FL

Funds would be used for roadway and drainage improvements and infrastructure and maintenance enhancement.

Hollywood, FL

Unfunded federal mandates have impeded the City of Hollywood's ability to fund a variety of projects necessary for the growth of the City. Such projects include a host of infrastructure activities, not the least of which is beach revitalization and downtown revitalization. The dollars spent on unfunded mandates would be better served in public safety and recreational activities, in addition to infrastructure.

Lauderhill, FL

Funds would be used to provide tax cuts.

Orlando, Fl

The City would use the local revenues to provide additional police officers, expand economic development initiatives, increase community based programs, and fund capital projects.

Tampa, FL

Funds would be use to enhance utility services or lower rates, and for stormwater control and diversion. In general, more staff time would be spent

on providing direct services to the public rather than complying with mandate regulations.

Atlanta, GA

The City would be in a better position to address its infrastructure needs, such as aging and deteriorating sewers, bridges, roads and viaducts. Furthermore, some funding would be available to address an overburdened and overcrowded criminal justice system, particularly courts and detention facilities. Moreover, additional funds would be available to provide more affordable housing in our community. Finally, more emphasis could be placed on training employees to improve the overall management of city government and, thereby, enhance the quality of life for our citizens.

Athens-Clarke, GA

1. The solid waste disposal/RCRA mandate increases the cost of current tipping fees and solid waste collection fees for local residents. (This does not directly impact other local programs since our landfill is in a self-supporting Enterprise Fund.)

2. The money and manpower spent by the Fire Department to comply with federal mandates (FLSA and Underground Storage Tanks) would be spent on annual inspections and public education programs.

3. The Public Works Department has had to cut back on the street sweeping program and restrict the timeliness of project completion and the ability to call back employees on evenings and weekends due to unexpected circumstances.

Augusta, GA

Augusta would prefer funding programs and services that have more direct benefit to its residents such as housing, parks and recreation.

East Point, GA

The immediate impact of committing revenues to unfunded mandates is reflected primarily in the City's inability to fully man its Police and Fire Departments, subsequently causing overtime expenses to increase.

Savannah, GA

Unfunded federal mandates have placed a burden on the City of Savannah. To comply with unfunded mandates, other projects such as building repairs and needed program expansions were delayed and/or eliminated from the 1993 budget. Programs and renovations such as stadium improvements to meet professional standards, needed expansion of City recreational programs, renovation and/or repairs of City-owned buildings, and expansion of neighborhood cleanup programs were eliminated or delayed and funding allocated to cover some of the costs associated with mandate compliance.

Sioux City, IA

Funds would be used to do more paving projects and upgrade the city's infrastructure.

Waterloo, IA

Almost all City services are being reduced by having to spend local revenues on federal mandates. Most service reductions are due to loss of personnel. Examples include less maintenance on old infrastructure, fewer hours of library operation, longer police response times, fewer recreational opportunities, and less right-of-way and park maintenance. If more capital funds were available, old infrastructure could be replaced or repaired. The flood of '93 has resulted in many stormwater facilities that need to be improved.

Arlington Heights, IL

The various federal reports that one City department has had to prepare have reduced the number of hours that staff was able to spend on grant applications and housing rehabilitation cases. The Clean Water Act and Safe Drinking Water Act have resulted in reduced and deferred infrastructure maintenance work and higher rates to customers.

Chicago, IL

Police Protection: Mayor Daley has consistently expressed his aim to increase the number of uniformed police officers, especially now that Chicago has embarked on a community policing initiative. The City Council earlier this year rebuffed a proposed property tax increase that would have been dedicated to Police Department operations. Local residents have thus made clear they are tapped out and will not accept higher local taxes. Absent mandate relief, more and more local taxes are spent meeting federal requirements instead of basic needs such as police protection.

Infrastructure Improvements: Chicago has had to rely primarily on bond refinancing to generate new sources of funds for badly needed infrastructure improvements without increasing the burden on local taxpayers. Consequently, there is a backlog of sorely needed improvement projects.

Highland Park, IL

Safe Drinking Water Act compliance directly impacts rates, although rate increases typically lag behind costs. There is impact on deferable capital improvements, such as tower rehabilitation and water line replacements.

Northbrook, IL

Adding a third fire station has been a subject of great local debate for the last 10 years. One major factor which has prevented funding is concern over the impacts of unfunded mandates. Thus mandates are diverting resources from life safety investments for almost intangible risks.

Palatine, IL

Funds would be used to provide:

- infrastructure improvements, such as streets, flood control and bridges;
- tax abatement;
- sidewalk plowing and construction; and
- reduced funding for capital projects and equipment.

Rock Island, IL

There would be greater emphasis on repair of existing, aging infrastructure, such as water and sewer systems and streets. It would also allow more funding for law enforcement and youth programs to encourage crime prevention.

Rockford, IL

1. Water division laboratory facilities could be expanded which would provide an additional income for the water utility.

2. Greater emphasis could be placed on some aesthetic water quality concerns if our water quality staff was free of some of the mandates.

3. Several "general" issues would be easier to address in the budget if mandates were less expensive.

Skokie, IL

There are several programs and services that our Village has had to reduce funding for or has been unable to implement due to lack of funding. Several affected programs and services include human services and public safety. In the Village's Department of Human Services, rising demands for our Meals on Wheels and Dial-A-Ride Programs cannot be adequately met due to an increasingly tight budget. Furthermore, an additional social worker is needed to accommodate outreach needs. Again, funding has been an inhibiting factor in securing this position. In the public safety area, traffic control preemption devices are desirable. However, due to funding constraints, the implementation of these safety devices is presently impossible.

Elkhart, IN

Funds would be available for additional public safety officers and capital improvements.

Fort Wayne, IN

Infrastructure improvements in neighborhoods, especially water and sewer system upgrades and drainage improvements, must be deferred to meet

mandates aimed at our water, sewer and stormwater Utilities. Increased police protection and capital projects requested by citizens must be deferred while resources are instead spent where the federal government mandates.

Mishawaka, IN

Needed system maintenance; automation of record keeping, drawings, etc.; vehicle replacements; system looping and upgrading; improved chemical control; well-field expansion; well maintenance; and meter upgrade and automation have been delayed. Employee wages were frozen in 1993 at the 1992 rate. Employee benefits were reduced to cut costs. Staff has been kept below needed levels.

South Bend, IN

Funds would be used to provide sanitary sewer rehabilitation, storm construction to relieve basement flooding and building rehabilitation.

Topeka, KS

Funds would be used for infrastructure repair and replacement.

Covington, KY

If the City was permitted to proceed with projects which have been delayed or stopped due to mandates, the tax base and number of jobs would increase significantly, allowing the City to use new resources to expand programs and services.

Louisville, KY

From the Metropolitan Sewer District --

On Combined Sewer Overflow: Major infrastructure repairs will be completed as needed. The City's aging sewer system (dating to the 1850's) is in dire need of proactive preventive maintenance. The need for system modifications to deal with basement flooding is jeopardized if monies have to be diverted to comply with expensive federal mandates.

On Stormwater Regulations: Community education, program expansion or initiation are probably the first actions hindered when money is diverted toward unnecessary required program elements. MSD's permit application attempts to circumvent this by allocating little or no resources to unnecessary program elements.

From the City of Louisville --

The City would upgrade police and fire protection and emergency medical services. In addition, the City would fully fund worthwhile improvements in park and youth programs as well as a number of beneficial capital improvements which have been postponed.

Baton Rouge, LA

Funds would be used to provide maintenance, repair and replacement of infrastructure and an environmental awareness program.

New Iberia, LA

The City of New Iberia has had to cut back on services provided to the citizens as a result of unfunded federal mandates. Some of the areas that have been drastically reduced are:

1. Police Department -- Officers and patrols have been reduced and funds for training and modernizing of equipment have been put on hold.

2. Parks & Recreation Department -- Personnel has been reduced, reduced programs are offered to the public and ground maintenance is hard to keep up due to lack of funding.

3. Public Works Department -- Personnel and services to the public have been reduced.

New Orleans, LA

Funds would be used to:

- expand the neighborhood cleanup program;
- provide a more aggressive litter education program; and
- purchase additional equipment that is needed in the Sanitation Department.

Brockton, MA

The City faces an urgent need to increase the number of police and fire personnel. Library branches would be open additional hours. And most critical of all, the repair of public buildings and the replacement of equipment and heating systems would be undertaken. This has been neglected for years.

Everett, MA

Funds would be used to provide public safety education, public health, recreation, elder services and assistance to the needy.

Haverhill, MA

Funds would be used for public safety -- police and fire.

Holyoke, MA

Funds would be used for:

- water infrastructure improvements on the existing distribution system;
- addressing the deficiencies of the three distribution reservoirs,

i.e. Ashley, McLean, and Whiting Street; and

- more effectively modernizing the motor roading and collection programs:
- Replacement of ancient sewers which collapse, sag, and/or back up; and
- Replacement of deficient sidewalks.

Springfield, MA

Funds would be used for:

- modernization and repair of public school buildings;
- construction of a new public works facility;
- construction of a new reservoir filtration system;
- repairs/upgrade of the wastewater treatment plant;
- infrastructure improvements, e.g., roads, sidewalks, bridges;
- increase in police personnel;
- supplies and equipment for public schools;
- expansion of bulk pick up program (solid waste);
- increase in public health programs and services; and
- expanded community and economic development programs (renewal/clearance).

Worcester, MA

Funds would be used for a variety of sewer rehabilitation and inflow/infiltration remediation projects; an extensive water conservation program, including large-scale retrofitting of fixtures on school and other public buildings; dam and water pump station rehabilitation; replacement of all residential water meters to measure water use more accurately; and land acquisition to improve protection of watershed and water supplies.

Hagerstown, MD

Funds would be used for public safety -- police and fire services -- road and traffic improvements, and park and recreation improvements. Taxes and utility user charges are higher than they would otherwise have to be. Sewer rates doubled in the last five years primarily due to sludge disposal rule changes and resulting increases in costs.

Rockville, MD

Funds would be used for the Summer Youth Employment Program and community policing.

Lewiston, ME

Funds would be used for:

- fire protection (we have had to put one truck out of service.);
- expanded police protection; and
- a minimized property tax increase.

Allen Park, MI

The City of Allen Park has not had funds to continue the City's Capital Improvement Program. Currently the City has over $4,000,000 worth of capital improvement projects for the 1993-94 fiscal year unfunded. The unfunded federal mandates continue to place a burden on the financial well-being of communities.

Flint, MI

Funds would be used for:

- infrastructure:
- a sewer system replacement program;
- delayed parks and road improvements; and
- repairs to facilities and storm sewers;
- service enhancement:
- improved water distribution system; and
- improved public safety through increased police and fire protection.

Garden City, MI

This year's budget will not fund replacement of our equipment and we will downsize our work force by five percent. The quality and quantity of service is bound to suffer because we were understaffed before. You can only cut staff so far without affecting service. Police cars with 90,000 miles are unsafe.

Grand Rapids, MI

Funds would be used for:

- increased police and fire protection;
- expanded parks and recreational activities;

- lower water and sewer rates;
- additional training of city employees;
- expanded public transit; and
- increased neighborhood revitalization.

Inkster, MI

The programs which would be funded are the:

- Abandoned Housing Demolition Program;
- Street Repair Program;
- Employee Training Program;
- Crime Prevention Program; and
- Office Computerization Program.

Jackson, MI

Funds would be used for maintenance of well pumps, high service pumps, lime slakes, and soda ash feeders. More money would be budgeted for the replacement of aging mains and lead services.

Kalamazoo, MI

Funds would be used for:

- renovation and construction of affordable housing;
- redevelopment initiative within the City (forgone due to exorbitant environmental costs);
- innovative water and wastewater treatment options;
- crime/drug prevention programs; and
- pollution prevention programs.

Midland, MI

Funds would be used to reduce utility costs.

Rochester Hills, MI

Funds would be used for non-essential services that are enjoyed most by our residents, such as completion of our pedestrian pathway system, construction of desired recreation facilities (i.e., a swimming pool), and youth programs and facilities. They would also be used for improved and/or increased essential services, such as police and fire protection, road maintenance, infrastructure improvements and the household hazardous waste program.

Romulus, MI

Funds would be used for road improvements and law enforcement.

Royal Oak, MI

Funds would be used for:

- relief sewer projects to reduce basement flooding;
- city building improvements (roofs, heating and air conditioning equipment replacement, etc.); and
- road maintenance and reconstruction projects.

If we are compelled to comply with curb cuts at all intersections (estimated cost of $2.5 million), unless a tax increase is approved by the voters, it will result in layoffs in other City departments, possibly including police officers and firefighters.

Sterling Heights, MI

Funds would be used for the purchase of additional library materials and to offer/expand special recreation and senior citizens activities. Employee training and development could be increased. Additional patrol vehicles could be on the road. There could be increased maintenance rotations in park areas (mowing, etc.) and additional personnel for code enforcement services.

Warren, MI

Funds would be used for capital improvements to City buildings and for additional police, fire, library and recreation services.

Columbia, MO

Monies are needed for the expansion of services to citizens, hiring of more police and fire personnel, purchase of mobile data terminals for police and fire personnel to improve efficiency, needed equipment purchases, and building replacements and various improvements.

Independence, MO

An example is the Storm Water Regulations for cities with populations of 100,000 or greater. Over $500,000 was spent for Independence's program. While the environment is important and the Independence program is a good one, the requirements to apply for an NPDES application were exhaustive and expensive. The money spent in the time frame required could have been used for important and necessary infrastructure repairs. The Storm Water Regulations require BMP, but they did not define it very well.

Jefferson City, MO

Funds would be used for additional sewer maintenance and construction.

St. Charles, MO

It has not been an issue of initiation or expansion; it's been one of deferment and cuts. For example, the capital cost of bringing facilities into ADA compliance has resulted in the upgrade and replacement of equipment and facilities being pushed back to later years which, in turn, causes increased maintenance and repair costs. In terms of recreation programs, cognizance of impact of the reasonable accommodation requirement leads to decisions to offer only those where accommodation can be readily attained.

St. Joseph, MO

Funds would be used for:

- expanded public safety services;
- enhanced social programs; and
- improved maintenance.

Jackson, MS

Funds would be used for street resurfacing and drainage improvements.

Burlington, NC

Garbage collection has been reduced from twice a week to once a week. Currently some projects and programs are being delayed. Funds would be used for capital expenditures for up-dated equipment and improved technology and better laboratories and additional and better infrastructure such as streets, sidewalks, water and sewer systems and storm drainage facilities.

Charlotte, NC

Funds would be used for community-based policing, housing, and city-within-a-city programs.

Durham, NC

Funding federal mandates, particularly those related to ADA, has meant delaying or scaling back other needed capital improvements for city parks and for downtown revitalization efforts.

Greensboro, NC

Funds would be used for:

- public safety programs -- additional positions;
- economic development initiatives -- maintenance programs for facilities; and
- capital purchases -- vehicles, computer equipment, etc.

Greenville, NC

Vacant positions would be "unfrozen" and staff would be added to better enable the City to perform its mission. Unmet capital needs could be

provided, including building renovations and expansions, thoroughfare improvements, recreation programs, drainage improvements, downtown improvements, a new City cemetery, and transit improvements. The City currently has over $16 million in identified unmet needs that become more intense and more costly to address. As a general rule, we must forego expansion of all non-mandated programs.

Rocky Mount, NC

The City initiated many user fees in programs like recreational sports to expand local revenues to balance the budget. This may mean a segment of our population cannot afford to participate in our programs, and is thereby excluded.

Winston-Salem, NC

We have seen:

- reductions in funds provided to grantee agencies;
- reductions in Job Corps investment;
- reductions in the City's contribution to the East Winston Economic Development Fund;
- decreased support for housing programs;
- reduced mowing frequency along rights-of-way and in public parks;
- elimination of the rodent control contract with Forysth County;
- increased user fees, such as a bulk container-refuse disposal fee, cemetery rates, on-street parking fees, transit fares, and recreation fees;
- reductions in the summer playground program;
- closing of recreational facilities -- the Morningside Neighborhood Center and the Winston Lake Pool;
- reduction in programming at downtown parks;
- elimination of the school crossing guard program at elementary and middle schools;
- deletion of drainage projects on private property; and
- reduction in the number of residential refuse collection pick-ups from twice a week to once a week.

Lincoln, NE

Funds would be used for:

- more instrumentation in the water quality lab;
- extension pilot plant testing;
- attendance at water quality seminars;
- expanded testing, personnel and equipment in the lab;
- more public education programs and interaction with the public on water quality issues; and
- extension distribution water quality testing.

Bridgewater Township, NJ

Funds would be used for:

- extension of public water lines to areas serviced by individual wells with documented contamination; and
- expansion of sanitary sewers to homes with documented septic system failures.

Hamilton Township, NJ

Hamilton Township Water Pollution Control has had to forego upgrading pumping stations and upgrading deteriorating collection system lines.

Jersey City, NJ

Funds would be used for recreation, parkland acquisition and redevelopment, job training and educational enhancement, general quality of life improvement projects, free local public mass transit projects, additional police and community programs to prevent crimes and drug addiction.

Santa Fe, NM

Funds would be used for building and park maintenance, human service programs, children's recreation programs, and employee raises and benefits.

North Las Vegas, NV

Funds would be used for:

- clean-up/code enforcement;
- additional police;
- a safe key program for children;
- enhanced learning services;

- enhanced recreational services
- additional parks;
- additional maintenance for the wastewater system;
- the valve exercising program;
- additional pre-treatment staff;
- additional building inspectors;
- a geo-technical engineer; and
- a public works inspector.

Albany, NY

Funds would be used for a sidewalk reconstruction program and reconstruction of and energy conservation in city-owned buildings.

Elmira, NY

Funds would be used for:

- recreation programs for youth and the elderly;
- home improvement programs;
- upgraded city parks; and
- citizen service centers.

New York, NY

Funds would be used for drug treatment, youth services, capital expenditures, parks, street cleaning and garbage collection, criminal justice programs for probationers and juveniles, firefighting services and day care.

Syracuse, NY

The water distribution system in the City of Syracuse is approximately 75 years old on average. A portion of the piping system should be replaced each year. The costs to comply with the Safe Drinking Water Act are preventing Syracuse from replacing water mains at a more appropriate pace.

Akron, OH

Funds would be used for construction or reconstruction of streets and bridges; stormwater ditch cleaning, realignment and reshaping; projects under state funding that is presently being used for water and wastewater capital projects; and construction of city buildings, parks, and recreational facilities.

Chillicothe, OH

We've started to charge a monthly fee per household for garbage pick-up.

Cincinnati, OH

ADA mandates have made a considerable impact on the monies available to repair and replace the infrastructure.

Cleveland, OH

The Division of Water has not undertaken an employee safety program, made certain capital improvements or enhanced customer services. The Department of Public Service has not undertaken preventive maintenance programs and has deferred certain capital projects due to costs associated with environmental audits needed for land acquisition.

Cleveland Heights, OH

Unfunded federal mandates absorb funds that would otherwise be directed at infrastructure maintenance and repair, and at a higher quality of service through fire, police and public works departments due to newer equipment and more manpower.

Lima, OH

Infrastructure replacements will need to be foregone to provide local funding of the federally mandated programs. These include such needs as replacement of leaking water and sewer systems, antiquated treatment systems and loss of capacity to service undeveloped areas (plant or support systems will not be capable of being funded for expansion).

The City would be required to provide General Fund assets (taxable income) which would impact safety services (police and fire), recreational resources, and street and bridge maintenance improvements.

Lorain, OH

We must raise our rates to pay for these mandates. Cost cutting measures are being enacted. Numerous non-treatment projects must be put off so that mandated updates can be done.

University Heights, OH

In a small city such as ours, any additional cost typically has an impact on our capital improvements and projects such as street maintenance, park improvements and equipment purchases.

Youngstown, OH

The treatment of waste water and storm water pursuant to EPA mandates will force the City to raise sewer rates and/or initiate new storm water treatment rates (fees). These increases will lessen the amount of disposable income available for our citizens, 60 percent of whom are elderly.

Lawton, OK

Funds would be used for establishment of a recycling center and compost facility.

Moore, OK

Funds would be used for:

- reconstruction and repair of streets;
- drilling wells and upgrade of the water system;
- reconstruction of storm water facilities;
- capital outlay equipment; and
- adequate manpower.

Norman, OK

Funds would be used for environmental programs and infrastructure improvements (streets, roads, intersections and bridges).

Tulsa, OK

The imposition of FLSA minimum overtime requirements on the fire department have undoubtedly decreased the number of firefighters we can employ.

Funds would be used for better sludge recovery systems and disposal means for both water and sewage sludge. Research on blending and disposal could be pursued, in addition to other innovative methods if funding were available. More funds could be used to replace an aging water distribution system, treatment system, sewer collection system, local drainage systems, and for repairs and maintenance of dams and storage reservoirs.

Gresham, OR

We would increase resources used for fire prevention, public safety, infrastructure construction and repair and economic development.

Lake Oswego, OR

The surface water program would be sharply reduced or eliminated, and the utility fee charged would be similarly reduced. Generally, more funds would be left for building and improving the infrastructure.

Springfield, OR

The City of Springfield is a small entitlement jurisdiction that receives federal Community Development Block Grant and HOME funds. Because the federal mandates require costly measures, the City, if given an opportunity to choose, will not participate in projects that involve lead-based paint and asbestos abatement. The costs of abatement are excessively high and would prevent the

City from accomplishing much needed housing and neighborhood development projects in the community.

Funds are taken away from maintenance and construction of streets, sanitary sewers, and storm drainage systems. This includes critically needed local projects, like the Springfield interceptor sewer. The total cost for six years is $3,412,700 for all unfunded federal mandates, including more than 50,000 hours of staff time.

Allentown, PA

Although there are several programs and services the City of Allentown might initiate or expand if local revenues did not have to be allocated to federal mandates, the City's major concern is holding or reducing its property tax rate. Federal mandates place an additional burden on a tax base which is already stressed to its maximum point. In order to avoid a tax increase in 1993, no money was budgeted for equipment replacement. Also, several staff positions remain vacant. Eventually, if these mandates continue, necessary services will need to be reduced or eliminated.

York, PA

In general, increases in expenditures result in decreases in street, bridge and storm sewer repairs.

Cranston, RI

There would be more money for textbooks for education, police officers and street paving.

Columbia, SC

The street division would be able to repair more sidewalks, curbs and gutters if these funds were not needed to meet federal mandates.

Rock Hill, SC

We would be extending water and sewer service to areas which are not currently being served. Expanded water and sewer service territories would increase economic development.

Kingsport, TN

Funds would be used for street projects and a composting effort.

Knoxville, TN

There would be added increased funds for economic development of a Center City Business Park, bringing jobs and industry to the area. Funds would be used for expanding fixed route bus service area, or adding evening fixed route bus services which would benefit a larger group of people; expanding to a full recycling program of solid waste, with either a material recovery facility or curbside pickup; and upgrading old fire equipment.

Amarillo, TX

Increased operating costs resulting from unfunded federal mandates have not resulted in program reductions per se, but they have caused the City not to fill positions in public safety and community services such as police, fire and parks and recreation. The under-staffing of these areas may be attributed to increased costs in other areas that stem from financially burdensome federal policies.

Arlington, TX

Arlington has continued to increase local revenues to accommodate the demands and costs of federal mandates.

Brownsville, TX

Funds would be used for:

- a recycling program;
- street reconstruction programs; and
- replacement of capital equipment such as ambulances, police vehicles, fire equipment, street sweepers, landfill equipment, small vehicles for various departments, street maintenance equipment, etc.

Carrollton, TX

Funds would be used for much-needed infrastructure repairs.

Fort Worth, TX

Since 1989, the City of Fort Worth has had to face major budget decisions that have forced the City Council to adopt budgets that have reduced the number of jobs included on the City's payroll by 800 positions. In addition to the position cuts, public libraries, recreation centers, and multi-purpose centers have had their hours of operation curtailed. Maintenance on streets, alleys, street lights, and traffic signals has been reduced. Funds have also been reduced for park mowing, irrigation, and color plantings. Another component in the City's cost containment strategy over the past several years has been the limitation of employee wage adjustments. Salary gains for City employees over the past six annual budgets have been far less than the annual increases in inflation. Budgets for 1988-89, 1989-90, 1991-92, 1993-94 included funds for 1.5 percent, 4.0 percent, 4.0 percent and 3.5 percent salary increases, respectively. No funds at all were budgeted for raises in 1990-91 and 1992-93.

The City Council, in deliberating the 1993-94 budget, as in previous years, has to again make tough choices in order to balance the budget. The Council had to scale back a proposed comprehensive crime package of $4.9 million directed at gang intervention to $1.54 million because of the lack of funds available this year. This scaling back of programs and services in the last few years has occurred despite a tax rate of $.95 per $100 dollars valuation on the

property tax, up from $.856 in 1989 despite water and garbage rates which have steadily increased over the last 10 years.
Operational expenses, not including capital costs, in the City budget for 1993-94 related to compliance with federal mandates neared the $9 million figure. Were it not for these expenditures related to federal mandates, it is possible that the $9 million would have been devoted to local priorities such as funding the full crime package for gang intervention, purchase of additional library materials, restoration of library hours, and other worthy programs.

Grand Prairie, TX

Due to RCRA Subtitle D regulations, recycling could not be accommodated this year.

Houston, TX

Greater growth would be seen in the following areas, if local revenues did not have to be allocated to federal mandates:

- public safety;
- health service delivery; and
- maintenance of city buildings, streets, ditches, weed cutting, sidewalks, traffic control, and park maintenance and development.

Laredo, TX

Funds would be used for:

- construction and maintenance of public facilities;
- capital equipment acquisition;
- road, bridge and drainage improvements;
- expanded public safety operations; and
- cost-of-living increases for employees.

Lubbock, TX

Funds would be used for infrastructure repair on parks, sewers, streets, etc.; capital equipment; preventive capital maintenance funding; economic development projects; and social services projects such as intervention programs.

Mesquite, TX

Programs and services the City of Mesquite has had to forego relate primarily to infrastructure improvements. Several capital improvement projects -- specifically street, drainage and park projects -- have been postponed to future dates because existing resources have been applied to federally mandated programs. For communities experiencing dramatic growth, such as Mesquite,

the use of existing funds to comply with federally imposed mandates severely impairs and strains our ability to simply maintain existing programs. Existing programs and necessary services must be expanded to meet demand in a growth-mode environment, however, mandates dictate where locally generated resources must be spent. Specifically, the City of Mesquite was forced to cut budget requests $890,000 for much-needed additional personnel and over $1,100,000 for capital equipment needs in its 1993-94 budget. Much of the equipment and many of the additional personnel requests could have been funded had it not been for government mandated programs.

Nacogdoches, TX
Funds would be used for:

- public transit;
- improvements in the Police and Fire Departments -- personnel to meet recommended safety levels;
- rehabilitation and reconstruction of the street system;
- addressing existing drainage and flooding problems.

Odessa, TX

Funds would be used for infrastructure maintenance and increases in employee salaries and staffing levels.

Port Arthur, TX

Because of unfunded federal mandates the City of Port Arthur is having to curtail water and sewer line maintenance. This is a real problem in our City. Many of our lines are old cast iron water mains that are clogged and brittle. The City is also scaling back the replacement of equipment. For instance, we are looking to replace fewer police cars. It is of such concern the police association bargaining unit has made maintenance of police cars one of its bargaining points.

San Marcos, TX

The water and wastewater utility system is particularly impacted by federal mandates. Maintenance and replacement of aging infrastructure is delayed, sometimes for many years. Local communities must go into debt to keep pace with ever-changing standards.

Funds would be used for police, fire, parks, employee merit increases, staff training, public information (handouts are no longer free), a geographic information system, office automation, and on-line services.

Sherman, TX

We would lower property tax rates and utility bills with the savings.

Waco, TX

An improved parks program and library expansion were forgone. The revenue stream had to be divested and fees increased to meet federal mandate requirements.

Wichita Falls, TX

Funds would be used for street rehabilitations, recreation, and economic impact zones.

Murray, UT

Funds would be used for police officers, firefighters and the park and recreation program.

Orem, UT

Road network expansion is being delayed. An additional fire station is being put off while funding is accumulated. Expansion of the park system is being deferred.

Salt Lake City, UT

Beyond general tax relief, which would certainly be a priority, we would center our resources on crime prevention and infrastructure improvements. Forty-one percent of our water system is over 50 years old. Our reservoirs are 80 years old. We are $80 million behind in street rebuilding. Also, elderly and low income housing is a high priority for which we desperately need funds.

Alexandria, VA

In order to meet the requirements of unfunded mandates, the City has diverted resources that might have been used to expand essential City services such as public transportation, or to finance necessary improvements to the public infrastructure. The City does take pride in its comprehensive response to mandated programs.

Chesapeake, VA

- Many road construction projects and critical drainage repair projects were not able to be funded in the capital budget.
- General maintenance and repairs of some public buildings and schools have been pared down.
- A residential drug treatment program was eliminated.
- We were unable to equip all City fire stations with emergency power generation, which is critical in providing emergency relief to the public.

- Hospital care and diagnostic evaluations for inmates with drug related diseases and AIDs were not fully funded.

Danville, VA

Funds would be used for rebuilding and upgrading water and sewer system lines, valves, meters, and other vital appurtenances that would make the facilities more economical and reliable, and improve the quality of services provided.

Portsmouth, VA

Unfunded federal mandates take away funds that would be used for City infrastructure items such as building renovations, street repair, curbs, drainage and sidewalks. They also limit needed revenue to fund salary positions and equipment purchases and replacement and repairs.

Suffolk, VA

Funds would be used for automation training and sewer and water expansion.

Virginia Beach, VA

We would provide more funding for infrastructure and education.

Montpelier, VT

- Funds would be used for more replacement of 100-year-old water lines.
- Lower taxes in urban areas would reduce suburban growth; it is becoming too expensive to live in areas needing city services.
- There would be less roadway reconstruction.
- There has been no replacement of an aged fire station and a recreation center due to lack of funds.

Kennewick, WA

City services are generally funded through property and sales tax revenues (General Fund). Since additional funding sources were not identified in the federal mandates, the cities are left with no option except to cut current levels of service in all areas: police, fire, parks, streets, etc.

Appleton, WI

Funds would be used for infrastructure rehabilitation and construction (public works). The more local dollars go to unfunded mandates, the fewer new buses, new support equipment, etc. can be procured. Also, it is necessary to make reductions in basic services such as bus service or support costs for bus service (Valley Transit).

Madison, WI

There has been a reduction in snow and ice control expenditures, street resurfacing and seal coating, library hours and park maintenance.

Wauwatosa, WI

Funds would be used for:

- expansion of the police department;
- the street lighting cable replacement program;
- street maintenance (increased service level);
- continued operation of the municipal landfill;
- purchase of automated garbage collection vehicles; and
- provision of storm sewers to unsewered areas.

Cheyenne, WY

We have made cuts in police, fire, cemetery, recreation, weed and pest control, animal control, engineering and planning -- to name a few areas. In most cases personnel as well as programs have been reduced.

APPENDIX D
CITY PROBLEMS WITH UNFUNDED FEDERAL MANDATES

Officials participating in the survey were offered an opportunity to describe regulations or requirements that best illustrate the questionable or illogical demands placed on their cities by the federal mandates being examined. Many responded to this with specific examples; many others offered general comments that reflected their frustrations with mandate compliance.

Gadsden, AL

Treated drinking water used for backwashing the filtration system in the treatment plant cannot be discharged in the river because it has a chlorine content greater than .044 PPM (as specified in the NPDES). Instead, it must be pumped to the wastewater treatment plant where if it has a chlorine content of less than .100 PPM when discharged, we are in violation of our NPDES permit. In effect, this actually puts more chlorine in the river and we have the additional cost ($1.5 million in capital costs) of pumping and treating.

Fayetteville, AR

The primary cost of an unfunded mandate facing Fayetteville is the requirement to eliminate all sewer overflows in the City or face tremendous fines. Overflows have been reduced dramatically and further capital improvements are planned. However, current deadlines facing the City make the requirement to eliminate all sewer overflows highly impractical.

North Little Rock, AR

The City is having to retest for lead based paint due to more stringent federal regulations.

Gilbert, AZ

The Town has stopped using oil based paints to stripe streets. Water based paints which are currently used are causing a need to stripe the streets more often. There may be more human life risk involved by the extra time spent on the road by painting crews than would be caused by any of the hazardous materials of the oil base paint.

Phoenix, AZ

It has often been the experience of the City of Phoenix that federal environmental regulatory programs, particularly those dealing with surface and groundwater protection, are inflexible and ill-adapted to the natural conditions that characterize much of the Western U.S. Programs developed on a model of humid watersheds, like the Potomac Basin, fail to consider the geographic diversity of the nation and can result in measures that, although potentially cost-effective and desirable in other areas, offer few benefits at great expense when applied to more arid regions.

The Clean Water Act is a prime example. Municipal stormwater permit requirements developed by EPA specified a level for monitoring that could not be achieved in Phoenix, which receives approximately seven inches of rainfall per year. Much of this annual precipitation arrives during localized short-term storm events, making it difficult to mobilize staff to drive to the storm location and collect samples. When storms do occur, they tend to flush large, naturally occurring sediment loads that may have accumulated for several weeks or even months since the last rain event. From the program implementation standpoint, stormwater management practices and control techniques uniquely suited to an arid environment need to be developed and recognized by regulators.

Similarly, Phoenix wastewater treatment plants discharge effluent into a normally dry riverbed that flows only in response to major storms or excessive spring snowmelt at higher elevations. However, the new NPDES permit requirements specify water quality standards that are in some cases extremely strict in an effort to protect aquatic organisms that cannot exist in the dry river. Although cities discharging to a flowing river are frequently allowed a short stretch of river called a "mixing zone" before water quality standards may be met, this option was not granted to Phoenix because the effluent comprises 100 percent of the river flow. This approach ignores the attenuation of pollutant concentrations that occur due to physical, chemical and biological processes in both wet and dry riparian environments. Groundwater protection programs can be equally inflexible. Requirements for engineered double liners and frequent groundwater monitoring at landfills may be appropriate in areas of shallow groundwater, but are less appropriate in areas where the depth to groundwater is several hundred feet.

Scottsdale, AZ

The unfunded mandate problem is not one of legislative overkill as much as incomplete or inaccurate science. The intent of the legislation is laudable and the direction of most of the legislation is necessary. In some cases, however, the public policymaking process is more immediately accessible than scientific analysis. As our ability to test to lower and lower levels of contaminants has developed, we have reacted by reducing the tolerance for these contaminants, sometimes to levels that science does not support. The costs for eliminating the last one percent traces of contaminants can far exceed the cost to eliminate the first 99 percent. Risk assessment should become a standard process for evaluating new standards.

We hope that the "unfunded mandates bandwagon" can be productive in this discussion, and is not used to swing the pendulum back to the other extreme of looking for ways to get federal standards out of the local government arena -- even those that are necessary for protection of the public health. Air Quality Permits (Maricopa County Air Pollution Control) are required before soil remediation projects may begin. The average processing time for A/Q permits is between six weeks and four months. This delay could lead to potential groundwater contamination and additional clean-up costs.
Federal EPA regulations require that each state adopt Surface Water Quality Standards based on guidelines developed for Eastern perennial streams. Most streams in Arizona are ephemeral streams, and many of those are effluent dominated. The guidelines imposed by EPA are not appropriate for most Arizona streams.

Tucson, AZ

Blanket mandates are an inefficient and ineffective utilization of taxpayers' dollars. Remedies and solutions should be applied on a regional and as needed basis. Cities need more flexibility in carrying out federally mandated programs. Currently, local dollars are being siphoned away from critical programs to meets stringent mandated requirements. An example of a mandate that is not regionally implemented is the National Pollutant Discharge Elimination Study (NPDES). The City must develop and implement an ongoing study to determine the sources and amounts of pollutants carried by stormwater runoff into our streams and rivers. Such a program is understandable in greenbelt and wetland regions. Tucson, however, is a desert community and our waterways are dry most of the year. We are spending millions of dollars to monitor pollutants in non-existent water in dry stream beds.

Another example is the Americans with Disabilities Act (ADA). The City of Tucson has been a national innovator in the transit services provided to its citizens with disabilities. The objectives of the ADA are laudable, however, once again, there is no flexibility in implementation. Due to the eligibility requirements of the Act, many elderly and frail Tucson citizens currently serviced by our paratransit system will have to find other means of transportation. This is the direct result of the Act preventing resource management. Cities may no longer limit the number of trips for each eligible citizen.

Anaheim, CA

The Endangered Species Act has become a rationalization for litigation on impeding development. Staff hours dedicated to responding to claims, public hearings, and the resulting delays in development are not achieving what we believe was intended under the Endangered Species Act. Moreover, imported water prices have risen substantially due to the listing of the "Delta Smelt" which contributed to increased water rates for the City's water customers.

Berkeley, CA

ADA deadlines and timeframes are unreasonable, with no additional funds to assist in compliance. With respect to ADA paratransit regulations, there is confusion in areas of ADA eligibility, client fare assessment, and linkage between fixed route providers and city-based programs.

Encinitas, CA

The Fair Labor Standards Act applies national pay and hour standards that do not respect the needs of local situations and practices. Example: Local Fire Protection and its labor have both found and agree that a particular work schedule is best. Demands of the FLSA forced both sides to accept national standards which have increased labor costs and threatened preferred work schedules.

The cost of conforming to ADA without any additional increase to the existing budget is another problem. Cost of curb cutting is $162,000, further reducing the budget for other services and programs. Retrofitting parks and recreation centers is about $203,000. The cost of the new Civic Center was increased based on its being the first facility falling under ADA requirements.

Recently the State downgraded San Diego's air quality classification from severe to serious. This means that our ridership goals have decreased, and it is easier and less expensive to meet target goals. The federal classification, however, has not changed, and by 1994, government employers of 100 or more have to initiate expensive plans, approved by the Air Pollution Control District, to meet the 25 percent increase in ridership mandated by the federal government. And while time and money is being spent on working toward these clean air goals, EPA is being petitioned to downgrade San Diego's classification from severe to serious. If this downgrade is passed through EPA, the rules mandated for San Diego will no longer be effective, and approved plans no longer necessary.

Fremont, CA

The City of Fremont's payment of overtime is governed not only by FLSA, but also by the various memoranda of understanding (MOU) with the City's seven bargaining units. The payment of overtime under the MOUs has historically provided a better benefit to the employee than that provided under the FLSA. However, since the FLSA requires payment of overtime under FLSA rules, if that provides a higher benefit, the City must track two separate payrolls to determine if payment under FLSA would entitle the employee to a higher level of benefit than under the MOU with the bargaining unit. This dual track approach is very time consuming and costly.

Gilroy, CA

The city is facing the potential shutdown of a museum due to cost of compliance with the ADA.

Irvine, CA

The scope of the National Pollutant Discharge Elimination Study and Clean Water Act requirements fall completely outside the city's financial capability.

Lompoc, CA

The Americans with Disabilities Act placed illogical, unreasonable demands upon City government and local business and property owners. The ADA is structured in a manner which does not allow reasonable interpretation and implementation at the local level. In addition to creating unreasonable financial burdens for local government and property owners, the ADA creates an administrative burden which affects an organization's ability to provide for the needs of the community. While it is recognized that providing accessibility to public facilities is of great importance, the ADA should have been structured in a manner

which allowed for phasing of improvement and local control in determining reasonable compliance.

Los Angeles, CA

The California Inland Surface Waters Plan (ISWP) was adopted to comply with the federal Clean Water Act. ISWP sets very strict water quality standards for discharges into inland water bodies, which include the Los Angeles River. The standards of ISWP are more restrictive than drinking water standards. The City of Los Angeles, therefore, must expend hundreds of millions of dollars to treat water being discharged into the Los Angeles River so that the fish and plant life can have purer water than humans.

The City of Los Angeles operates a landfill known as Lopez Canyon. The Canyon walls are comprised of rock which is, for the most part, non-permeable. Furthermore, there is no underlying water table which stands to be contaminated.

Despite the lack of risk of contamination, the Resource Conservation and Recovery Act, Subtitle D requires that all new landfills or expansions of existing landfills be lined with composite liner systems, but liner systems do not have to be installed in landfill areas already in use. The potential benefit to be derived from lining new expansion areas or side walls of Lopez Canyon is virtually non-existent, yet it will cost the City about $12 million.

National City, CA

The Clean Water Act requires secondary treatment country-wide, while advanced primary treatment is the proper level for deep water ocean discharges. The regional cost is $4.8 billion in wasted monies.

Newark, CA

Among the most difficult mandates for the City of Newark are those associated with wetlands regulation. The process for clear determinations is drawn out, and often overly complicated. This has an expensive impact on the development process, and the City in turn loses key projects and funds. Waste management is also significantly affected by these regulations. It took more than five years to obtain a final wetlands determination at our local landfill. This cost the City a great deal of money in consultants and staff time for unnecessary contingency planning.

Orange, CA

The Endangered Species Act may have a profound impact on the cost and availability of drinking water which must be imported into Southern California. The cost to municipalities and our water customers may run into the hundreds of millions of dollars.

Palm Springs, CA

The Clean Water Act Section 404 Federal Wetlands Regulations illogically interpret our dry desert washes as navigable waterways, like the Mississippi River. Another federal mandate, the Endangered Species Act, forced us to pay $5,000 to an ecological consultant to look over the same "navigable waterways" for Desert Tortoises -- none of which were found.

Programs may have a logical and well-intended basis, but since no funding source is provided, funds must be taken from other valuable programs which are of great local significance.

The National Pollutant Discharge Elimination Study requires storm water testing for constituents known to have existed in Coachella Valley. Storm water sampling on multiple annual occasions in an area which may see no rain for years and extensive costly programs to clean up contaminants which are nearly non-measurable is estimated to cost Palm Springs $1,300,000 annually.

Pico Rivera, CA

To have to retrofit existing recreation areas to comply with ADA is an extraordinary expense which may force cities to actually abandon or dismantle existing equipment due to the unavailability of funds to make improvements.

Pleasanton, CA

Under NPDES, discharge limits for wastewater have occasionally had such restrictive numerical limits that the City would not have been permitted to discharge drinking water. Incremental limits would be more realistic.

San Bernardino, CA

Very strict state mandates cover most areas affected by federal mandates, resulting in costly duplication.

San Diego, CA

The City, under the Resource Conversation and Recovery Act, is required to provide a liner on the sides of a canyon landfill site, when no liner is required on the bottom of the site. This requirement is based on the determination that the filling of the site is comparable to a lateral expansion.

San Francisco, CA

The documentation and reporting requirements, especially for hazardous waste and underground storage tanks, take up most of the administrative time for these programs. They are cumbersome and inconsistent across different levels of government. The recordkeeping requirements take time away from the actual activity.

San Leandro, CA

The cost of monitoring the run-off of storm water inlets under the Clean Water Act required the City to pass a parcel tax assessment of approximately $30 a year to support program regulations. The parcel tax was not enthusiastically supported by the community.

Santa Monica, CA

Nationally established regulations without financial support place an unfair burden on the City which is already providing a high degree of environmental initiative and protection for the community. Specifically, mandates such as the radon rule will require monitoring of water-borne radon that contributes only five percent of the radon found in homes. This mandate is not based on a comprehensive risk assessment and is an example of how questionable federal mandates dissipate the City's ability to focus scarce resources.

Simi Valley, CA

Complex, conflicting requirements of the Clean Air Act and Clean Water Act (Corps of Engineers) make it difficult to get projects done. Recent wetlands definitions and policy changes make it almost impossible to get projects through.

Stockton, CA

Asbestos removal requirements are expensive and, according to many studies, may increase the exposure risk instead of reducing it.

FLSA requirements produce more misunderstanding and misuse than the intent, resulting in extraordinary and otherwise unnecessary court action.

Temple City, CA

Although Temple City supports the intent of the Americans with Disabilities Act -- namely, to remove any discriminatory practices in public facilities -- the ADA places an unfair financial burden on cities to implement regulations within a short span of time, especially during these difficult, if not impossible, economic times.

Tustin, CA

The lead and copper rule is a problem. Even though, based on hard calculations, the City's water is not corrosive, we are required to identify 60 "high risk" homes (only 180 exist in our entire service area) and obtain a sample from an inside faucet; this requires that the residents not use any water for a six-hour period. This is an unreasonable inconvenience and intrusion on our customers' privacy.

Likewise, the proposed radon rule is a problem. Less than four percent of human exposure to radon is from water, yet it will cost us $4 million in capital costs and $30,000 in annual operating costs if the proposed radon standard is mandated. This represents an extraordinary

amount of money to reduce a low level of exposure. The majority of radon seepage into homes is through soil.

Vallejo, CA

ADA regulations that require special paratransit services for disabled persons will result in reduction of this service to elderly persons who are not disabled.

Victorville, CA

Regulations are designed for large cities and not rural or desert areas. Curb cuts are required in areas that contain no improvements.

Colorado Springs, CO

The mandates of the storm water program under the Clean Water Act far exceed local needs; there is no demonstrated local need for this program.

In regard to the Resource Conservation and Recovery Act, Subtitle D, the states and local governments have been regulating solid waste disposal for decades without federal intervention. We did not need this mandate at all, much less the drastic nature of the requirements.

Lakewood, CO

The overall approach of Superfund encourages private litigation, with minimal actual cleanup.

Shelton, CT

The Clean Water Act has an impact on the rate we pay for water from privately owned water supplies. The seven percent increase levied in July 1993 for hydrant water charges was an indirect charge caused by mandates.

Torrington, CT

The exposure of cities under Superfund is ludicrous when one considers that all applicable rules and regulations were followed when waste disposal actually occurred.

Waterbury, CT

Costs associated with removal of storage tanks, Davis-Bacon wages on federal contracts, and anticipated lead regulations will result in landlords walking away from their properties.

Boca Raton, FL

Unfunded mandates included in the Safe Drinking Water Act will cost the utilities tens of millions of dollars based upon conservative (questionable) standards of dubious benefit to our customers.

Boynton Beach, FL

After the City received federal grant dollars to construct a regional wastewater plant, the federal government changed standards to require toxicity testing of the effluent.

Cape Coral, FL

Cape Coral is a young city, with the majority of homes being constructed since 1970. Therefore, a large majority of the structures were built after lead standards for paints came out. The development of a lead paint hazard reduction program will require heavy use of staff time and finances for a relatively minor problem in the City.

Coral Springs, FL

Lead and copper testing: The problem is not in public water systems, but in homeowners' plumbing systems.

EPA Stormwater Regulations: The canal systems which retain the City's stormwater are not directly connected to waters of the United States (as defined under the Clean Water Act). However, the City, and not the separate taxing districts which retain the stormwater, are held responsible for EPA stormwater requirements.

Fort Lauderdale, FL

CERCLA requirements for the Wingate Landfill closure will more than double the cost for the work that needs to be done. While clean water is not an illogical or questionable demand, increasing the level of cleanliness desired should be analyzed in terms of cost/benefit and risk/impact.

Hollywood, FL

The federal government does not appear to be sensitive to a municipality's financial capability to meet the mandate's requirements. The EPA's requirement for anti-degradation for effluent outfall required the City to obtain a $5 million bond issue.

Lauderhill, FL

The City questions having to measure and control trace elements in the water supply that pose no proven health hazards.

Orlando, FL

Wastewater treatment plant reports that are sent to EPA cannot be changed or amended after EPA has received them, even if it can be proven that an error was made in their completion, that the error can be demonstrated as to methodology, that it was made in good faith, and that it was not meant to deceive or mislead. This is significant because plant personnel must "self-certify" their reports. If the report shows a plant violation, then EPA can impose costly fines and penalties plus require process changes.

Athens-Clarke, GA

Athens Transit has to obtain a storm water permit and prepare a storm water plan because transit facilities have an industrial SIC code classification.

Atlanta, GA

Requirements of many of the unfunded mandates in the personnel and human resources area are practices the City would implement routinely in the interest of fairness and good human resources management, such as equal opportunity and affirmative action (Title VII). Costs are in record keeping and reporting, along with implementation of associated practices sometimes more stringent than the City would have chosen without the mandate. Costs also are associated with lost opportunities for devoting staff time to other endeavors and disallowed federal costs. In the area of clean water and safe drinking water, the City, over the next two years, will issue over $400 million in debt to meet certain federal and state environmental mandates with no intergovernmental aid. However, when mandates were not as numerous or costly, the EPA typically provided 75 percent of the funds necessary to meet compliance standards.

Augusta, GA

The discharge limits for Augusta's wastewater treatment plant have been made more stringent in order to improve water quality in a 1.75 mile reach of a stream. This will require improvements at the plant estimated to cost $10,000,000, and the resulting benefits are questionable.

Smyrna, GA

The City questions having to produce paperwork to prove what we are already recognized for regionally -- leadership in recycling and solid waste management. The City has to be extremely wary due to the complicated web of FLSA, ADA and other federal laws affecting personnel administration. Without litigation encouraged by these laws and regulations, we would have lower attorneys' fees, insurance costs, etc.

Arlington Heights, IL

Under the Safe Drinking Water Act, the lead/copper rule makes the water supplier responsible for actions and alterations undertaken on the customer's premises. The supplier

has no control or authority on the private property yet must employ very costly measures to negate the adverse situations the customers bring upon themselves through their choice of fixtures and repair methods. Proposed arsenic regulations will hold suppliers to levels which technology cannot even measure. Lead/copper standards are not based upon clinical test results. The large expenditures being required may prove to be unnecessary.

Chicago, IL

Retrofitting Chicago's Northwest Incinerator in order to comply with Clean Air Act requirements will cost the City at least $73 million. In addition, the City may be required to spend an additional $17 million annually to treat the incineration as "hazardous" under the RCRA (the matter is currently before the U.S. Supreme Court). The combination of these two mandates may render continued operation of the Northwest Incinerator non-cost-effective, requiring the City instead to increase its reliance on space-eating landfills.

Dekalb, IL

ADA is very complex, yet local officials are expected to make correct compliance decisions.

Highland Park, IL

The bulk of Safe Drinking Water Act compliance cost derives from the lead/copper rule. This resulted in the addition of a costly treatment additive to coat lead pipes in residents' homes and yards. The risk of lead in parts-per-billion levels is not well known, nor is the efficacy of corrosion control agents vis-a-vis lead.

Niles, IL

In many village buildings, ADA compliance measures will necessitate providing accommodations which may cost more than the building is worth.

Rockford, IL

Under the Safe Drinking Water Act, lead and copper sampling "at the tap" should not be the responsibility of a water utility once that utility has proven "at the source" that no problem exists in the water to be delivered.

And what can the rationale possibly be for imposing on the City a maximum contaminate level (MCL) of just 5 ug/l (micrograms/liter) on trichloroethene (TCE) when the federal removal action level (RAL) applied to the federal government's own projects is 128 ug/l? MCLs seem to be arbitrary as opposed to based on scientific facts.

Skokie, IL

While in general we support the concepts prompting federal mandates, there are examples of questionable or illogical demands placed on our Village. A commonly heard complaint is that federal standards are continually changing. Before a department can adapt to a set of

regulations, an entirely new group of rules replaces the previous one. This has created confusion and frustration, and it inhibits efficiency. A second commonly heard complaint is that bookkeeping regulations for federal mandates are too complex and inflexible. While some uniformity is necessary, the regulations for implementation and record keeping should be flexible enough to reflect the diverse backgrounds and challenges of American cities.

Fort Wayne, IN

The City of Fort Wayne has required curb ramps to be built as part of every new sidewalk/curb construction project for the past several years. There are approximately 4,000 unramped intersections in Fort Wayne. The cost of ramp construction for each intersection is approximately $10,000. This means that over time the City would have to spend $40 million.

Waterloo, IA

Without proper funding, the short time frames to satisfy federal mandates is the biggest problem. The capital funds just can't be found in short time frames.

Topeka, KS

On bridge repainting projects, the City currently collects sand-blasted materials in an apron under the bridge. Paint chips are then contained in concrete forms. Lead based paint regulations to be in effect very shortly will require this operation to be performed in an enclosed system with negative air pressure. For one of our upcoming bridge painting projects, the cost of repainting under the current regulations would be $1,200,000. Under the new regulations this cost will increase to $2,400,000.

Covington, KY

Underground storage tank regulations have stopped or significantly delayed redevelopment projects which are critical to the revitalization of urban neighborhoods. In one case, over $250,000 was spent on acquisition and cleanup of a site for elderly housing. Because of possible groundwater contamination, the project was delayed three years. Groundwater is not used as a source in this area. In the meantime, the surrounding neighborhood experienced serious disinvestment.

Louisville, KY

From the Metropolitan Sewer District -- Although not yet fully enacted, past discussions with regulators have uncovered some potentially unrealistic demands concerning combined sewer overflow. At one time, there was a proposal to capture overflows from combined sewers and provide treatment equal to what we provide at advanced Wastewater Treatment Plants. We have successfully thwarted this proposal thus far, but unrealistic expectations which are not based on true water quality impacts are still possible.

From the Air Pollution Control District -- Requiring plants to comply with state or local regulations which are required to be adopted by a certain date and with federal EPA guidance -- when the EPA guidance does not yet exist -- poses a problem. This assures a lack of uniformity because each state or local agency must write its own regulations as best it can.

From Solid Waste Management Services -- Toxic Concentration Leachate Procedure testing requires all ash tests to be conducted not equivalent to actual internment. This forced us to do extra testing and to take action that did not improve our environment. In addition, this department has been affected by mandates that require it to provide safety uniforms to protect against bloodborne pathogens and to contain freon when old appliances are collected for disposal.

From the Louisville Water Company -- Risk management in public health should focus on the highest impact areas in the environment. Regarding the risks from lead, the highest risk is in lead in older homes, followed by lead in soil, followed by lead in air, and finally lead in water company pipes. The focus on regulation, and the cost of compliance, should take into account the risk being addressed.

Baton Rouge, LA

The City questions the mandate that requires it to meet "California Air Quality Standards" for its citizens but does not require other parts of the state to do the same.

Brockton, MA

Compliance with ADA requirements in buildings which are almost 100 years old and which would require the expenditure of hundreds of thousands of dollars -- with no assistance from the federal government, even on a matching basis -- poses a problem for the City.

Springfield, MA

Drinking water in the U.S. is the safest in the world. The cost of marginal improvements demanded by EPA is phenomenal. It would be wiser to spend millions removing lead where its quantities present significant danger than to prevent minuscule amounts from reaching water.

Compliance with the Americans with Disabilities Act will require an expenditure of $6.7 million to retrofit schools between 1994 and 1997.

The combined sewer overflow policy is projected to cost the City $120 million over the next 15 years.

The cost of removing radon from water is exorbitant compared to the risk. Better water filtration systems would be a better use of limited capital.

Hagerstown, MD

It's really sad when federal program regulations for special studies, higher wage rates, over-engineered construction standards can add 50 percent to 100 percent to the cost of construction projects. We find that many times it is less expensive not to use federal funding to avoid all the ridiculous rules, regulations and red tape.

Rockville, MD

The City is required to invest $2 million to develop a capability to remove water contaminants, prior to discharge into the Potomac, that were already present when the water was originally drawn from the River.

Allen Park, MI

The City has continued to fund projects to comply with numerous unfunded federal mandates. Through the years the state and federal regulations have changed, in areas such as ramps for disabled persons, requiring the City to go back and replace work previously done.

Garden City, MI

In the last three years the City spent over $250,000 removing petroleum-contaminated soil so we could put an asphalt parking lot on top of it. What is asphalt made of? The same stuff we were removing. There is no drainage into a stream and removal of this soil will not significantly improve the underground water which is grossly contaminated from other sources.

Grand Rapids, MI

The Great Lakes water quality initiative requires that the City test for chemicals not found in the Great Lakes basin and try to meet discharge limits so low that current technology cannot read them. This effort is addressing less than 10 percent of the problem.

Midland, MI

The City's current landfill site requires no liner or leachate system due to more than 75 feet of clay, but Resource Conservation and Recovery Act regulations will increase cost of disposal by 800 percent.

Rochester Hills, MI

Under the Safe Drinking Water Act, contaminated soils and water distributed during utility construction must be removed when encountered and disposed of properly (i.e., treatment of water and hazardous landfill of soil). This disposal is extremely costly. Clean soil is then placed in the excavated area, only to be recontaminated by contaminants migrating from surrounding soil. The soil will eventually be removed and treated as part of site cleanup.

Contaminated water encountered during construction is often many times cleaner than runoff from a parking lot would be, yet it is required to be treated if encountered.

Royal Oak, MI

Under the ADA we are required to install curb ramps at all intersections, at an estimated cost of $2.5 million. In many cases the sidewalks leading to these intersections are in need of repair, at an estimated cost of $10 million, and the City may be forced to rip out and replace functional curbs while leaving the sidewalks unrepaired.

Independence, MO

Most of the regulations appear to be enforced with emphasis on paperwork instead of water, air or solids quality. The administrative requirements to assure paperwork compliance seem to be out of proportion to the reason for the regulation, i.e., environmental quality. The Part 503 sludge regulations under the Clean Water Act will require continuous air emissions monitoring that has not been coordinated with the regulations of the Clean Air Act. Logic did not prevail.

Jefferson City, MO

Although we had no significant stormwater contamination potential, we processed a National Pollutant Discharge Elimination Study individual permit application according to strict state regulations. We were later informed that we did not have to submit an application after all! Wasted time and money!

St. Charles, MO

Expectations of ADA relative to parks and recreation facilities and programs pose a problem for the City. ADA compliance is mandated by 1995 but standards affecting playgrounds, picnicking, etc. won't be available until December 1994.

Jackson, MS

Storm water regulations are imposed on Jackson because of its population but are not imposed on bedroom communities with smaller populations -- and all storm water drains to the same receiving stream.

Greenville, NC

In 1995, as part of rehabilitation programs, the City will have to identify the presence of lead based paint within houses rehabilitated with federal funds. Currently, the City is required to notify occupants of housing receiving rehabilitation assistance and obtain signatures of acknowledgement that their homes may have lead based paint in them. In 1995 we will have to test and then remove the lead based paint; we will not be able to cover it. Federal funding cannot be used for purchase of lead based paint testing equipment. That cost, $20,000-$30,000, will be passed on to local governments.

Under the Clean Water Act lead and copper rule, samples of water must be taken from customers' bathroom or kitchen taps. The City has no control over the type of tap fixtures and piping used in these sampling sites; therefore, we feel the samples are not representative of the water in the system.

The Corps of Engineers must visit sites of proposed construction for wetlands determination. They are severely understaffed and the City has waited in excess of three months for them to conduct a site visit. Their response time is unacceptable and some of their personnel are very inexperienced in construction matters.

Federal groundwater remediation mandates that the states clean up groundwater. The state in turn tells publicly owned treatment works (POTWs) to accept discharges. Municipalities are paying to clean up water not sold or contaminated by them.

There is a situation in which Greenville is mandated by the state to remove an underground storage tank no longer in use. However, because of a prior environmental problem regulated by another federal agency, we can't disturb the ground to remove it.

Grand Island, NE

Under the Safe Drinking Water Act's lead and copper rule, the City tests to demonstrate compliance. While copper tests are slightly high due to the "first draw" testing requirement, the highest test level is well below health concerns. Since copper contamination is from the customers' own plumbing, the solution for lower copper levels is to flush the faucet for a few minutes. Yet, by law, the City is required to spend tens of millions of dollars for water treatment -- with no health benefit.

Lincoln, NE

Under the current NPDES process for which the City of Lincoln is seeking a permit for operation of its Theresa Street Treatment Plant, new regulations are compelling the City to further treat the effluents being discharged into Lincoln's Salt Creek, notwithstanding the fact that the effluent currently effects a dilution of the concentrated salinity of the upstream Salt Creek water and has, in fact, created a habitat for fish that would not otherwise exist. The cost of further purifying the water could run into the tens of millions.

Under current FLSA standards, the City must pay overtime to its firefighters for work performed in excess of 53 hours per week, notwithstanding the fact that state law and the City's long-standing custom was to work firefighters 56 hours per week. This requires the City to automatically pay every firefighter three hours of overtime for every week of work in order to have regular shift work performed.

Jersey City, NJ

Being designated a non-attainment area for CO and Ozone under the Clean Air Act reflects a regional issue that must be addressed. Whatever the City can do to reduce the use of single occupant vehicles will have only a minor impact. Our levels are impacted as an entry way to

New York City. Until the Northeast Corridor Mass Transit issues are addressed, little improvement will occur.

Syracuse, NY

The City of Syracuse has been ordered to increase watershed protection each year; at the same time, we should plan for the eventual construction of a water filtration plant. The costs associated with the former make it difficult to achieve the latter.

Akron, OH

Daily monitoring and analysis of wastewater constituents when either the constituents are non-detectable or far below allowable limits is a questionable mandate. Examples of non-detectable constituents are hexavalent chromium, tetrachloroethlene and methophenol. Lead and nickel are consistently less than allowable limits.

The use of total metal concentrations in determining aquatic criteria in lieu of dissolved of bioavailable metal is overly conservative.

The federal requirement for federal categorical industries to monitor and analyze for metals not on premises or in the production process -- for example, silver -- is questionable.

Chillicothe, OH

When painting the City's water storage tanks, the lead paint mandate made the cost $100,000 higher.

Cleveland, OH

Lead paint falls into the environment because of the requirement to remove it before repainting a bridge. Repainting then becomes cost prohibitive and is not undertaken.

Columbus, OH

The City of Columbus recently completed the requirements of the lead/copper rule of the Safe Drinking Water Act for the January-June 1992 monitoring period. The regulatory "action level" for lead was to exceed 15 micrograms/liter (ug/l). The 10 sites that exceeded the lead action level were collected from single family residences built between 1983 and 1987 which utilized copper plumbing joined by tin/lead solder. No sample collected from lead service lines exceeded the lead action level.

A thorough review of the Columbus Water System has been performed and there are no lead main waterlines within the Columbus distribution system. The highest level of lead concentration in the distribution system line was one sample that was recorded at 2 ug/l out of 28 samples with the rest recorded at less than 1 ug/l.

The Columbus Division of Water currently utilizes best-available-technology (including zinc-orthophosphate) in the water treatment process to control water mediated corrosion. However, during subsequent monitoring periods, the City may violate the lead action level (samples collected in private residences), even though the City is doing everything practical to reduce corrosion of residential plumbing.

Under the current recommended policy the City of Columbus could become responsible for the correction of lead in water violations recorded in private residences even though the City of Columbus does not contribute to or cause the problem. This puts the City of Columbus in a very precarious position of correcting private water systems violations with public funds.

Additionally, the City of Columbus has recently started an active lead in housing abatement program, that by all scientific review of the data is a far more productive use of resources to curtail exposure to lead. The significant problem that exists with the use of lead in paint for older housing stock could cost $108,100,000 in abatement remedies alone.

A scientific review of the sources of exposure of lead to children needs to be performed with priorities being established towards the most identified source that achieves the best reduction for the dollars allocated. Additionally a thorough review should be performed on the contribution of specific types of faucets to the lead level in the home water distribution system. All of the sites that exceeded the lead action level in Columbus had "swivel head" faucets. These faucets routinely have an interior brass ball valve that is subject to corrosion.

Additionally in areas where higher than normal levels of lead are encountered in homeowner water supplies an educational program to inform the public to flush their faucet for just a few seconds to clear the first drain level could be very beneficial.

Amendments to the Safe Drinking Water Act specify, that beginning in 1993, water utilities must analyze drinking water for at least 133 parameters. These parameters include 16 inorganic (metals, asbestos), six radiological (radon, etc.), and 111 organic (benzene, pesticides, PCBs, dioxin, etc.) compounds. Initially, most of these chemicals must be monitored quarterly for at least one year.

The cost to monitor these parameters will be approximately $6,000 per sample per quarter, or $24,000 per year, for each water source or entry point to the water distribution system. This monitoring scenario will be extremely expensive for a utility with several water sources or numerous entry points to the distribution system. Additionally, no analytical method currently exists for several of the organic compounds, making compliance with the monitoring requirements somewhat difficult. The cost alone to monitor dioxin will range from $950 to $1,560 per sample, depending on the analytical protocol.

In many instances the compounds that must be monitored are not even used in the area of the water supply, or have been banned for many years. As an example, DBCP use has been canceled for 15 years and was used on pineapples in Hawaii. Of the 52 pesticides that are on the monitoring list, only nine are used in Ohio in quantities that might be detected.

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A more rational approach would be to structure programs to monitor for those compounds that may impact human health (based on scientifically derived risk assessment processes), and are used in an area in sufficient quantities to be detected. Utilization of sample composting and monitoring more frequently for "real-world" compounds would significantly enhance the current, costly monitoring scenario mandated by the SDWA.

Furthermore, primacy agencies must be given latitude and flexibility when working with utilities on a case-by case basis, to develop an appropriate water quality monitoring strategy. A science-based program that allows for local flexibility will result in a program that still insures the safety of the public, but with significant cost reductions.

Dayton, OH

The NPDES requirements for municipal storm water discharges place an unfair economic burden on cities. The program does not address the number one source of stream degradation, agriculture.

Lawton, OK

The City questions the requirement to install a clay/synthetic landfill liner in an area where existing clay soils provide more than adequate protection against groundwater contamination.

Tulsa, OK

The City's stormwater permit application alone cost $1.1 million. The Safe Drinking Water Act's testing and treatment regulations cover areas for which the system has no control, such as lead and copper in individual plumbing. Wastewater backup and overflows in many areas pose no harm during storm conditions yet costs to correct are extensive for facilities used for less than five percent of time in some cases. Recent studies on lead in paint indicate regulations are an overreaction, just as asbestos abatement regulations were.

Springfield, OR

The Fire Department has numerous training mandates required by federal regulations, including Superfund Amendments and Reauthorization Act of 1986 (Title III) which relates to blood borne pathogens and confined space rescue.

Allentown, PA

The Clean Water Act, Section 304, requires state regulatory agencies to achieve water quality standards in water courses. The mechanism for achieving the mandate is the adjustment of affluent parameter limits in NPDES operating permits of sewage treatment facilities. Permit limits developed by the state are so stringent that they are essentially technologically unachievable. If there were no industries in Allentown, sewage discharges from domestic sources alone with subsequent full treatment by Allentown's existing advanced wastewater treatment plan would result in continuous violation of the proposed limits.

Allentown has filed a legal appeal of the permit conditions. As part of the support for Allentown's position, we engaged a consultant to do a feasibility study of the treatment options.

York, PA

The City has spent more than $100,000 to monitor low levels of hydrocarbons in groundwater far removed from wells. It has spent hundreds of thousands of dollars for dozens of tests each day to show that its sewage treatment plant is operating properly. It has spent $150,000 to argue against metals limitations in its wastewater permit -- limitations which are technologically impossible to meet.

The City is spending tens of thousands of dollars to provide curb ramps required by ADA to connect streets to deteriorated sidewalks that cannot be used by wheelchairs.

Knoxville, TN

The Clean Air Act inhibits the training of new firefighters because of the air pollution generated by real fires. Therefore, new firefighters deal only with simulated rather than actual fires.

The cost of adding Saturday lift bus service is high. An alternative, to comply with the ADA service level requirement, would be to eliminate Saturday fixed route bus service, so the City won't be required to provide Saturday paratransit service.

Amarillo, TX

Many of the environmental mandates, particularly those involving groundwater protection at landfill sites, stormwater run-off and wastewater effluent standards, fail to take this area's climatic and geographic factors into account. These standards do not reflect responses to specific environmental threats, and they result in millions of dollars being spent to "correct" problems which do not exist.

Austin, TX

Treatment technologies being required for the Safe Drinking Water Act are not backed by good scientific studies, i.e., there are not adequate health effects data available. In some cases cities may be forced to use alternative treatment processes that are not well established and are very expensive, with no gain in public health benefits received.

Fort Worth, TX

Unpermitted discharges of wastewater, including discharges from a wastewater collection system, are not allowed by EPA. They are considered to be permit system violations and must be reported. During wet weather conditions, Fort Worth has numerous wastewater overflows from manholes in the collection system due to inflow and infiltration into the sanitary sewers. These are reported to EPA on a quarterly basis. In April 1992, the City

received an order from EPA to develop and submit a plan for elimination of all unpermitted discharges from the collection system. A plan was submitted to EPA for elimination of inflow/infiltration-related overflow problems within a 15-year time period. EPA indicated that this time period was too long, and a seven-year period was more reasonable. Negotiations are still underway with EPA on the plan and schedule for corrections. Although a final order by EPA has not been issued, the City expects that the seven-year time period will be required to come into compliance. The City maintains the position that seven years is not a practical time period to correct all problems. This is in consideration of the estimated $100,000,000 cost to comply. It is the position of the City that the Clean Water Act should be amended to allow for reasonable schedules to improve the collections system, as long as water quality standards are not violated. In large wastewater collection systems, it may not be practical to assume that all overflows can be eliminated, and crash construction programs aimed at an unreachable goal may result in inefficient use of public funds.

Laredo, TX

Under NPDES the City is required to monitor storm drainage which runs off into the Rio Grande -- when drainage from Mexico also runs off into the same river.

Lubbock, TX

Local costs of stormwater runoff regulations were significantly understated by EPA. Lubbock has very little rainfall and should have been excluded from the cities that had to comply with the stormwater regulations due to the fact that it is not considered a danger. RCRA Subtitle D costs for protection of groundwater are significant, even though there is no real problem.

Mesquite, TX

To comply with solid waste recycling requirements, Mesquite has had to hire two employees to inspect solid waste before it is dumped -- and the City already pays the State of Texas $200,000 for landfill inspection fees.

Odessa, TX

The City questions landfill liner requirements and restriction of liquids at all landfills in the U.S. without taking into consideration soil characteristics, ground water levels, weather conditions, cost for alternate disposal, etc.

Port Arthur, TX

Concerning EPA's RCRA Subtitle D regulations that govern landfills: The stringent and costly measures imposed on typical municipal landfills are far more appropriate for hazardous waste sites -- thick plastic liners, leachate collection and treatment, equipment for monitoring volatile organic compounds, etc. The current system for trench preparation has already been certified to provide the nation's water supply with more than adequate

protection from any hazards incurred through landfilling activities. Unfortunately, too often the adage applies that "What is perceived to be better is the enemy of good enough."

San Marcos, TX

Federal mandates are imposed without assessments of costs to local governments. Local taxpayers are not aware that higher tax and utility bills can often be attributed to unfunded federal mandates. Many rules and requirements of the Safe Drinking Water Act are not based on scientific data, but on hastily conceived assumptions. Arbitrary regulations are expensive and difficult to satisfy.

Murray, UT

The ridiculous testing requirement of the Safe Drinking Water Act costs the City $100,000 per year.

Orem, UT

The City questions having to use oxygenated fuels when our problem is PM10 -- and oxygenated fuels increase PM10.

Salt Lake City, UT

In the past two years, Salt Lake City has spent nearly $6 million for module design and construction in order to be in compliance with Subtitle D of the Resource Conservation and Recovery Act.

Alexandria, VA

The demands of these unfunded federal mandates are questionable or illogical primarily because there are so many of them, their compliance deadlines are all nearly upon us, and there has been almost no opportunity to determine the big picture impacts of all of these changes occurring simultaneously.

Chesapeake, VA

The City questions the requirement that when recovering oil from a spill, the ground water treated must contain less lead than the allowed limits for drinking water.

Danville, VA

Compliance with the Safe Drinking Water Act, surface water treatment requirements, sampling and testing for lead and copper, and water quality standards for toxics impose unreasonable wastewater treatment requirements. The benefits achieved from these requirements do not justify the cost of compliance. Improved water quality and safer drinking water could be achieved if the funds used for compliance with these requirements were used to improve deteriorating systems.

Portsmouth, VA

In many instances federal mandates must be met with little or no warning. In these instances, mandated items must be funded without being budgeted because there was not sufficient notice to include them in the budget process.

Suffolk, VA

Complying with the Safe Drinking Water Act's fluoride rule is extremely expensive. No method of brine discharge is acceptable at sites. No other methods for removal are available without discharge being prohibited.

Montpelier, VT

The City questions restrictions on use of water supply (reservoir) because of fluctuating water levels and "possible" effects, even though historic fluctuations never led to any "kills" in anyone's memory.

Kennewick, WA

ADA mandates create a severe hardship when old structures have to be updated. Further, problems are created by the lack of definition in the program. The "canned" answer received when concerns are voiced is "It will be determined in the courts." It is hard to budget based upon that kind of direction.

Appleton, WI

The Americans with Disabilities Act, without being funded, requires putting lifts on buses when our local Elderly and Disabled Advocacy Group supported not doing this. In northeastern Wisconsin, it may not make as much sense to put on lifts as it does in other communities. Ridership using the lifts is a very small fraction (two percent) of the City's paratransit system, yet we will spend $300,000 for the lifts.

REBUILD AMERICA COALITION

SUPPORTING QUALITY INFRASTRUCTURE INVESTMENT

Testimony
by
County Commissioner Andrew Warren, Bucks County, PA
Chairman of the Rebuild America Coalition
before the
House Public Works and Transportation Subcommittee
on Investigations and Oversight
March 15, 1994

Mister Chairman, Members of the House Public Works and Transportation Subcommittee on Investigations and Oversight, my name is Andrew Warren. I am a County Commissioner in Bucks County, Pennsylvania, and the Chairman of the Transportation Committee for the National Association of Counties. I am here today representing the Rebuild America Coalition as its Chairman. It is indeed a pleasure to appear before you.

The Rebuild America Coalition, founded in 1987, is a broad, non-partisan coalition of 60 national public and private organizations committed to reversing the decline in America's investment in infrastructure and devoted to raising public awareness for the need for quality reinvestment. The Rebuild America Coalition includes public officials, organized labor, engineers, builders, financiers, contractors and architects.

The Rebuild America Coalition is concerned that we are losing the momentum gained in the last presidential campaign for greater investment in our nation's infrastructure. While the nation "talked the talk" in 1992, we have yet to "walk the walk." And with complex problems such as health care on the national agenda for 1994, even getting heard is going to be difficult this year. But it is imperative that our voice be heard because without increased investment in our nation's basic foundations -- its roadways, bridges, airports and airways, mass transit systems, wastewater treatment and water distribution facilities, solid waste disposal plants and public buildings, America's economic health is at risk.

The bill for twenty years of national neglect of our country's infrastructure has come due. This past winter, cities across America saw antiquated water pipes, in many cases close to 100 years old, rupture and disrupt service to hundreds of thousands of homes and businesses. In my home state of Pennsylvania, a water main break caused two large sinkholes to open up and destroy a seven-story building in the heart of downtown Allentown. Thankfully, no one was in the building when it partially collapsed.

Congestion at our airports and on our highways also continued to be a major problem this past year, creating billions of dollars in lost productivity.

We no longer can continue to operate this way because of the fundamental fact that America's economic competitiveness and its infrastructure are so closely linked. We all are aware that America's emergence as a world leader in the 20th Century reflects the influence of an outstanding infrastructure. But today, when we are still living off of technologies introduced in the late 19th and early 20th Centuries, the United States is investing in relation to its gross domestic product only 60 percent of what it invested in public works in the 1960s and less than one-quarter of its two foremost competitors, Germany and Japan.

1301 Pennsylvania Avenue, NW, Suite 501, Washington, DC 20004 ▾ Phone: 202-393-2792 ▾ Fax: 202-737-9153

So how are we going to turn this situation around? First, let's take a look at the Clinton FY'95 budget because that probably is going to be the jumping off point for a lot of your immediate decisions.

Considering the spending constraints imposed by last year's budget reconciliation bill, it is the Rebuild America Coalition's opinion that the infrastructure portion of the President's budget is surprisingly good for counties, cities and states. While a few federal infrastructure programs would be cut back, most are being increased.

The first Clinton budget increased spending on transportation substantially, and this budget continues that trend by requesting full funding of the core federal-aid highway program and the transit formula capital grant program at the levels authorized by the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA). The budget for environmental infrastructure programs also is generally good. Two disappointments are the 25 percent cut in transit operating assistance for urban areas and the level of spending allocated for the wastewater state revolving fund used by local governments to build and upgrade sewage treatment facilities.

It is our intention to work hard to see that, at a minimum, the levels of funding proposed by the Administration are achieved, and to continue our efforts toward our five longer term goals of full funding for ISTEA; increased funding for water infrastructure; adoption of a federal capital budget; improvement of infrastructure financing methods; and increased commitment to infrastructure planning, research and technology.

I'd like to say just a few words about each of these five goals:

First, the Coalition continues to support full funding of ISTEA to preserve and improve our nation's surface transportation infrastructure. We call on Congress to appropriate the full authorization levels for highways and transit and to move forward with new transportation technologies, including high-speed rail transportation and intelligent vehicle highway systems. We also call on the Congress to finalize its designation of a National Highway System (NHS) in accordance with the timetable required by ISTEA as a first step towards the designation of a National Transportation System. Failure to act on the NHS by the ISTEA deadline of September 30, 1995 will cause states and local governments to lose more than $6.5 billion in FY'96 authorized highway funding. Finally, before I leave the subject of our nation's surface transportation, I'd like to emphasize the Coalition's concern that Congress preserve the user fee concept of the Highway Trust Fund and return the recent 4.3 cents per gallon increase in the federal fuels tax to the Highway Trust Fund to ensure there are adequate funds to maintain the condition and performance of our federally-funded highways and mass transit systems.

Second, the Rebuild America Coalition urges the Congress to increase funding for water infrastructure needs, including for the wastewater SRF program and the President's proposed SRF program for drinking water systems. We believe that water infrastructure should be funded at no less than $5 billion per year. This is necessary if we are to begin to address our nation's accumulated wastewater and drinking water capital needs. The EPA estimates that we have $137 billion in unmet wastewater capital needs, and that drinking water systems nationwide will have to invest $1.4 to $1.7 billion annually to implement Safe Drinking Water Act regulations.

Third, the Rebuild America Coalition believes that the United States Government needs to establish a long-term, multi-year capital budget so that it can budget and account for its physical infrastructure more rationally. On behalf of the Coalition, I would like to express thanks to the House Public Works Committee for unanimously passing a capital budgeting provision for inclusion in last November's House Reinventing Government Bill. I would like you to know that the Coalition will continue to actively support Representative Bob Wise's Capital Budgeting Act of

1993, HR 1182, which would divide the unified budget into an operating budget, representing the day-to-day costs of running the government, and a capital budget to record long-term federal investments in physical infrastructure. Our nation's capital expenditures must be treated in a manner consistent with what they are -- investments in our nation's future growth and productivity. A federal capital budget is the best way to provide the Congress with the information that it needs to determine the nation's optimal level of infrastructure investment.

Fourth, the Rebuild America Coalition believes that states and localities must be able to take advantage of tax-exempt financing in their efforts to increase infrastructure investment. To assist them, the Anthony Commission on Public Works included in its 1989 report a wide range of proposals that would ease restrictions on tax-exempt bonds and expand their usefulness to state and local governments. The Rebuild America Coalition endorses the recommendations of the Anthony Commission, and supports legislative initiatives that would ease restrictions on tax-exempt bonds (such as Representative William Coyne's Public Finance and Infrastructure Investment Act of 1993, HR 3630), increase bank purchases of governmental bonds (such as Representative John Lewis' HR 2171), create tax-exempt municipal savings bonds (such as the Tax-Exempt Municipal Savings Bond Act of 1993, HR 2101, also introduced by Representative John Lewis), and remove barriers in the tax code to public/private partnerships.

Fifth and finally, the Rebuild America Coalition supports an increase in federal resources, including federal laboratories, committed to infrastructure education, research, development and technology transfer to foster innovation and increased productivity in the design, materials, construction, maintenance and operation of the nation's public works infrastructure. In particular, we support comprehensive research on high-performance construction materials and systems, and efforts to expedite the commercialization of these new technologies. Clearly, more effort also must be devoted to collecting and disseminating information about successful state and local funding innovations. Paramount in all of these efforts is the need to improve ways to transfer infrastructure-related technology from federal R&D programs into practice within municipal public works agencies.

As my last point today, I'd like to make you aware that we intend to ask the President to convene a White House Summit on Infrastructure for the purpose of establishing a national strategic infrastructure investment plan for the 21st Century. We believe that America needs to take a comprehensive look at how our nation's infrastructure connects with other national goals for clean water, safe disposal of hazardous wastes, international competitiveness, efficient mobility of people and goods, environmentally sustainable development, energy independence -- and, of course, jobs creation, given that every $1 billion spent on infrastructure creates 50,000 new jobs. We welcome your support in making such a summit happen.

Mr. Chairman, Members of the Committee, it is our belief that we owe it to our children and our grandchildren to leave in place quality transportation, water, sewer and solid waste disposal facilities, just as past generations have done for us. If we are to be positioned for the 21st Century, we must make sure that our public works facilities are ready to meet the challenge. Thank you for allowing me, as Chairman of the Rebuild America Coalition, this opportunity to appear before you today. If there are any questions, I would be pleased to answer them at this time or provide written responses at a later date.

REBUILD AMERICA COALITION

SUPPORTING QUALITY INFRASTRUCTURE INVESTMENT

FACT SHEET

The Rebuild America Coalition is a broad coalition of public and private organizations committed to the infrastructure challenge. It includes the mayors, city councillors, and other public leaders whose jobs it is to maintain, inspect, and plan for the building and rebuilding of our public facilities. They are supported by the engineers, builders, financiers, contractors, and architects whose careers are dedicated to the highest standards of quality, safety, and cost effectiveness.

Mission Statement

The Coalition's mission is to:

- Create public awareness of the need to increase infrastructure investment and infrastructure's role in building the nation's economy and improving the productivity of the nation;
- Promote the economic benefits of job creation through public and private infrastructure investment;
- Encourage government action at the federal, state and local levels to increase infrastructure funding;
- Encourage innovations in technology, financing, and public/private partnerships;
- Encourage formation of similar state and/or local coalitions; and
- Foster joint cooperation among the public and private sector organizations in support of resolving the nation's public works crisis.

Legislative Goals

- There should be no further funding reductions in existing federal programs that address infrastructure needs.
- The existing federal infrastructure trust funds must be continued, adequately funded, and fully expended for their intended purposes.
- Federal restrictions on the use of tax-exempt financing for infrastructure purposes should be eliminated.
- A federal capital infrastructure program should be created to provide assistance to states and localities in meeting infrastructure needs.
- A federal long-term, multi-year capital budget should be established.

1301 Pennsylvania Avenue, NW, Suite 501, Washington, DC 20004 ▾ Phone: 202-393-2792 ▾ Fax: 202-737-9153

Membership

Steering Committee Members:

American Consulting Engineers Council
American Institute of Architects
American Public Works Association
American Road & Transportation Builders Association
American Society of Civil Engineers
Associated General Contractors of America
Building & Construction Trades Department/AFL-CIO
Council of Infrastructure Financing Authorities
National Association of Counties
National Association of Home Builders
National Association of Securities Professionals
National Association of State Treasurers/Council of State Governments
National League of Cities
Public Securities Association
U.S. Conference of Mayors

General Members:

Airport Consultants Council
American Association of Port Authorities
American Concrete Institute
American Concrete Pavement Association
American Concrete Pipe Association
American Congress on Surveying and Mapping
American Institute of Steel Construction
American Iron and Steel Institute
American Planning Association
American Portland Cement Alliance
American Public Power Association
American Public Transit Association
American Society of Landscape Architects
American Subcontractors Association
American Trucking Associations
American Water Works Association
Associated Builders and Contractors
Association of Local Housing Finance Agencies
Association of State Dam Safety Officials
Concrete Reinforcing Steel Institute
Council of State Community Development Agencies
Edison Electric Institute
Highway Users Federation for Safety and Mobility
Inland Marine Underwriters Association
International Bridge, Tunnel & Turnpike Association
Mechanical Contractors Association of America
NACE International
National Aggregates Association
National Asphalt Pavement Association
National Association of Housing and Redevelopment Officials
National Association of Regional Councils
National Association of Surety Bond Producers
National Council for Public-Private Partnerships
National Electrical Contractors Association
National Erectors Association
National Ready Mixed Concrete Association
National Roofing Contractors Association
National Society of Professional Engineers
National Stone Association
National Utility Contractors Association
National Waterways Conference
Sheet Metal and Air Conditioning Contractors' National Association
Surety Association of America
Water Environment Federation

For more information contact: Carol Everett, Executive Director, Rebuild America Coalition, 202/393-2792.

ADDITION TO THE RECORD

AMERICAN SOCIETY OF
CIVIL ENGINEERS

Washington Office
1015 15th Street, N.W., Suite 600
Washington, D.C. 20005-2605
(202) 789-2200

STATEMENT

OF THE

AMERICAN SOCIETY OF CIVIL ENGINEERS

ON THE

NATION'S INFRASTRUCTURE NEEDS

SUBMITTED

TO THE

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

U.S. HOUSE OF REPRESENTATIVES

MARCH 15, 1994

The American Society of Civil Engineers is pleased to submit for the record the following statement concerning the current state of America's vital public works infrastructure and ways we may begin to address the problems of neglect and under investment that have undermined our core infrastructure facilities.

AMERICAN SOCIETY OF CIVIL ENGINEERS

The American Society of Civil Engineers (ASCE), founded in 1852, is the oldest national engineering society in the United States. Membership, held by more than 115,000 individual professional engineers, is about equally divided among engineers in private practice; engineers working for federal, state and local governments; and those employed in research and academia. The Society's major goals are to develop engineers who will improve technology and apply it to further the objectives of society as a whole, to promote the dedication and technical capability of its members and to advance the profession of civil engineering.

As civil engineers, who have served at the forefront of the design, construction and operation of America's myriad infrastructure facilities, we feel particularly well qualified to address the current state of our infrastructure, as well as infrastructure financing techniques and infrastructure research and innovation endeavors that will help to reverse the decline of America's public works facilities.

STATE OF THE INFRASTRUCTURE

The Nation's infrastructure includes highways, streets, public buildings, mass transportation facilities, resource recovery facilities, air transport facilities, water systems, waste disposal or treatment facilities, dams, ports and waterways, and other public facilities. In this era of financial restraint, infrastructure investment has declined significantly as a percentage of the Gross Domestic Product (GDP) and visible signs of infrastructure deterioration are everywhere. However, there is a direct correlation between a sound infrastructure and the U.S. economic health and competitiveness. With continuing financial constraints, it is imperative that our national leadership take all possible steps to ensure that maximum value and benefit is obtained from every infrastructure dollar invested.

ASCE is concerned with the accelerated deterioration of the infrastructure, the general reduction in investment for the preservation and enhancement of our quality of life, and the maintenance of U.S. competitiveness in the world markets.

Numerous reports have attested to the overall under investment in, and decline of America's infrastructure. Fragile Foundations, the Final Report of the National Council on Public Works Improvement (NCPWI) released in 1988, thoroughly detailed the decline of America's infrastructure and recommended the following actions:

- A national commitment, shared by all levels of government and the private sector, to increase capital spending by as much as 100 percent above current levels;

- Clarification of the respective roles of the federal, state and local governments in infrastructure construction and management to focus responsibility and increase accountability;
- More flexible administration of federal and state mandates to allow cost-effective methods of compliance;
- Accelerated spending of the federal highway, transit, aviation and waterways trust funds;
- Financing of a larger share of the cost of public works by those who benefit from services;
- Removal of unwarranted limits on the ability of state and local governments to help themselves through tax-exempt financing;
- Strong incentives for maintenance of capital assets and the use of low-capital techniques such as demand management, coordinated land-use planning and waste reduction and recycling;
- Additional support for research and development to accelerate technological innovation and for training of public works professionals; and
- A rational capital budgeting process at all levels of government.

Even after six years, ASCE still embraces these nine NCPWI recommendations as a solid framework for improving our infrastructure.

Among the more recent reports is the 1993 Congressional Budget Office (CBO) Paper "Updating Trends in Public Infrastructure Spending

and Analyzing the President's Proposal for Infrastructure Spending From 1994 to 1998". While total public infrastructure outlays have risen in real terms throughout most of the 1956-1990 period, CBO reports, "federal spending for infrastructure as a percentage of total federal spending has declined since the late 1970's. This percentage was largest in 1965 (6.3%), with capital investment more than three times that of non-capital investment. By 1992, federal spending was 3.0% of the total budget, with capital spending only a little more than twice that of non-capital spending".

Another useful comparison is infrastructure investment as a percentage of the GDP. According to CBO: "Throughout the 1960s and 1970s, federal spending for infrastructure averaged 1% of GDP. In 1980, total federal spending for infrastructure was 1.2% of GDP, the highest it has ever been. Since 1980, this ratio has declined steadily, reaching 0.67% in 1989. From 1990 to 1992, however, federal investment increased relative to GDP, and in 1993, federal spending as a percentage of GDP is again estimated to rise, but only by 0.04%".

INFRASTRUCTURE FINANCING

Much of the Nation's infrastructure was built in the last half of the nineteenth century or the first half of the twentieth century and it was generally financed by local government and private enterprise. Around the middle of this century, the federal government invested heavily in infrastructure facilities such as waterways, dams, irrigation systems, highways, airports, water pollution control plants and urban transportation. Much of this investment was turned over to

local governments for operation and maintenance. As we approach the end of the twentieth century, the Nation's financial needs have expanded, and the roles and responsibilities of the state and federal governments have changed. Concerns of public leaders have changed to include providing more economically maintainable infrastructure as well as planning for life cycle funding to include the cost of maintenance. Hence, new and innovative methods of financing infrastructure need to be developed, and time-proven methods should be retained as well to meet these changing demands.

ASCE supports the development of new and innovative methods of financing infrastructure and retention and restoration of methods that have been proven successful in the past. These methods include:

1) The tax-exempt bond financing and related infrastructure funding strategies of the Rebuild America Coalition:
   a) providing tax incentives for public - private partnerships,
   b) creating tax-exempt municipal savings bonds,
   c) increasing purchases of governmental bonds,
   d) expanding state revolving loan funds,
   e) creating a Federal Infrastructure Bond Bank, and
   f) enhancing the efficiency of municipal bonds.
2) The establishment of infrastructure financing agencies within the states to provide low interest loans for new construction, rehabilitation or replacement of infrastructure;

3) Federal loans to state infrastructure agencies to provide the initial and supplementary capital;

4) Private financing and operation of infrastructure components such as water systems, water pollution control plants, rapid transit, toll roads, landfills and similar facilities;

5) Application of equitable user fees to provide funds for proper operation, maintenance and establishment of sinking funds for replacement or rehabilitation;

6) Use of a multi-year capital development budget at the federal level to separate the national investment needs from operating expenses, so as to aid in planning infrastructure development;

7) Equitable use of development fees and impact fees to pay for new infrastructure construction;

8) Dedicated user taxes and trust funds to finance specific classes of infrastructure such as highways and airport/airway systems, which require investment of trust funds in the facilities for which they are mandated;

9) Establishment of special service districts or other taxing authorities that can generate revenues to repay the bonds and operational costs of constructing and operating public works facilities;

10) Increased use of the federal funds and resources including federal laboratories, for infrastructure education, research, development and technology transfer.

ASCE also supports public awareness programs concerning the growing infrastructure crises and public participation on citizen advisory committees for planning, financing and operating infrastructure facilities.

INFRASTRUCTURE RESEARCH AND INNOVATION

The NCPWI estimated that a doubling of the annual expenditure of $90 billion spent on infrastructure is needed to meet national infrastructure needs. In reality, the doubling of funding, even through the use of innovative financing techniques, appears unlikely. Therefore, it is essential to increase productivity and reduce costs through the development of innovative design, materials, construction, maintenance and operation techniques.

Currently, there are a number of obstacles which discourage innovation on a widespread scale. Civil engineers, for example, are under increasing pressure to eschew innovation and to be conservative in their judgment because of lawsuits, rules, regulations, legislation, standards and a desire for predictability.

Fragmentation within the design and construction industry limits the support of long-term research efforts that could result in technological gains and innovation. Appropriate technical innovation and support groups, such as the Rebuild America Coalition, can contribute to progress, cost-effectiveness and improved productivity and quality throughout the infrastructure industry.

ASCE urges government officials and private citizens to encourage education, research and development related to infrastructure

facilities to foster innovation and to increase productivity in design, materials, construction, maintenance and operations while maintaining engineering quality and structural integrity.

ASCE believes appropriate methods to implement infrastructure research and innovation include:

- Encouraging leadership to support progressive planning, financing, design, construction, maintenance, rehabilitation and operation of infrastructure systems;
- Supporting legislation and policies that encourage adoption of new technology and processes;
- Focussing national attention on infrastructure needs through cooperative efforts such as the Rebuild America Coalition;
- Supporting and encouraging, through appropriate incentives, research to accelerate the development of existing technology and develop new technology in the fields of design, materials, construction, maintenance, rehabilitation and operation of the infrastructure;
- Supporting establishment of an appropriately funded infrastructure research program at the federal level which would be developed in conjunction with state/local agencies and private enterprise;
- Supporting establishment of a national clearinghouse to identify and provide information on federal, state and local government and private sector infrastructure research and development activities; and

- Supporting efforts to limit the added risk and liability that may be associated with innovative infrastructure technology.

Increasing public interest in, and reducing obstacles to innovation is a formidable task. ASCE, as the representative body of the profession largely responsible for the deign and construction of the manmade environment, is deeply concerned about the nation's growing infrastructure needs and considers research and development programs leading to innovation as vitally important to help close the gap. In pursuit of this goal, ASCE has established the Civil Engineering Research Foundation (CERF) to foster a unified civil engineering research effort and create a coordinated research and development (R&D) program that both addresses industry and professional needs and involves industry and the profession in planning and conducting appropriate research projects. CERF is now working with government, industry and academia to develop and finance new cooperative research initiatives in the infrastructure arena. ASCE is committed to bringing the need for infrastructure innovation to the attention of the public and its elected representatives and officers.

CONCLUSION

ASCE believes that the historic underinvestment in the Nation's public works infrastructure has been well documented. ASCE respectfully recommends adoption, at pertinent levels of government, of a broad array of infrastructure financing mechanisms to reverse this pattern of underinvestment in vital public works facilities. Moreover, ASCE strongly endorses greater commitment to infrastructure research

and innovation to enhance productivity, reduce cost and improve quality through the development of innovative design, materials, construction, maintenance and operation techniques.

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SAM SPEROTTO, Chief Counsel

U.S. House of Representatives
COMMITTEE ON PUBLIC WORKS
AND TRANSPORTATION
SUITE 2165 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4472

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JACK SCHENDLER, Minority Staff Director

April 15, 1994

TO: Members, Subcommittee on Investigations and Oversight

FROM: Subcommittee Staff

RE: Summary of Subject Matter for Investigations and Oversight Subcommittee Hearing on Highway, Bridge and Transit Infrastructure Needs, Thursday, April 21, 1994, 9:30 a.m., Room 2167 Rayburn House Office Building

INTRODUCTION

This hearing, the second in a series of hearings to examine our nation's infrastructure, will provide a detailed and in-depth examination of highway, bridge, and transit infrastructure needs. The Subcommittee has scheduled this series to evaluate the potential economic impact of not meeting the nation's infrastructure needs, to review existing funding levels and projected funding for the future, to consider alternative financing methods, and to assess the adequacy of infrastructure research and development efforts. Their purpose is to establish a comprehensive and up-to-date record of needs and available funding to provide a basis for critical infrastructure investment decisions.

The first hearing in the series, held on March 15, 1994, provided a general overview of the nation's infrastructure needs. Subsequent hearings will provide similar evaluations in the areas of aviation, water resources, and innovative and alternative financing proposals.

BACKGROUND

The importance of highway, bridge, and transit infrastructure investment to our nation's ability to compete was recognized by the massive investments authorized by the Interstate Highway program, the Federal Transit Act (formerly the Urban Mass Transportation Act of 1964), and the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which reshaped the federal transportation program to meet the needs of the 1990s. These legislative commitments to infrastructure development, however, frequently have been shortchanged through budgetary decisions that have severely reduced the authorized investment levels.

Numerous studies have shown that infrastructure investment promotes economic growth, enhances productivity, creates jobs, improves the environment, and increases our ability to compete. As a result, the Committee on Public Works and Transportation has consistently backed investment in infrastructure at fully authorized levels. However, virtually any method used to measure infrastructure investment (in constant dollars) shows a decline in recent years. The Congressional Budget Office reported last year that total federal infrastructure investment in 1992 was down 9.1 percent from 1980; that the 1992 rate of infrastructure spending, as a percentage of total federal spending, was half of what it was in 1965; and that, as a percentage of Gross Domestic Product, infrastructure investment had fallen from 1.2 percent in 1980 to 0.7 percent in 1992.

Distribution of Spending

Historically, pursuing a consistent, broad-based infrastructure investment policy has been difficult because the federal government has failed to make a long-term commitment to any one infrastructure program. Instead, one infrastructure investment program has been favored for a time, and then a shift in priorities has favored another.

According to Congressional Budget Office data, in 1956 approximately 35 percent of the total $11.6 billion (in constant 1990 dollars) in federal infrastructure spending was dedicated to highways (including bridges), with no federal funding allocated for transit infrastructure. By 1978, federal spending had risen to $40.5 billion, and the distribution for highway spending had dropped to 27 percent of the federal share, with transit receiving 10 percent. Federal infrastructure spending peaked at $43.9 billion in 1980 with highways receiving 30 percent and transit 11 percent. After 1980, federal spending fell, and by 1992 stood at $39.9 billion. Again, the distribution of spending among categories shifted, with highways increasing to 39 percent and transit decreasing to 9 percent.

Passage of ISTEA in 1991 initiated a trend of increased federal highway infrastructure spending. It also established new flexible funding opportunities that provide for the potential use of more than $70 billion in federal highway program funds, over the life of the bill, to be used to finance qualified transit projects. FY 95 budget proposals would continue the trend of increased emphasis on highway infrastructure spending. Highway investment would be funded at approximately 44 percent of total federal infrastructure investment, and transit at 10 percent.

HIGHWAY AND BRIDGE INFRASTRUCTURE NEEDS

According to the 1993 Report of the Secretary of Transportation on the Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance, there are approximately 235,000 miles of federal-aid highways that are in mediocre or poor condition and in need of repair. The cost to eliminate backlogged highway deficiencies is estimated to be approximately $212 billion. The average annual cost (1992-2011) just to maintain federal-aid highways in their 1991 condition is $37.9 billion (1991 dollars).

There are approximately 118,000 structurally deficient bridges and 81,000 functionally obsolete bridges in the United States that would cost an estimated $78 billion to fix. A structurally deficient bridge cannot accommodate the loads expected for the particular highway of which the bridge is a part; a functionally obsolete bridge does not have adequate lane or shoulder width or vertical clearance to serve existing traffic demand. The annual cost to maintain bridges in their 1991 conditions is estimated by the Department of Transportation to be $5.2 billion (1991 dollars).

The 1993 Status Report from the Secretary of Transportation considers alternative investment strategies for highways and bridges, and estimates the costs both to maintain and to improve their condition. The investment scenario that would merely maintain highways and bridges in their current condition essentially would leave the backlog of highway and bridge deficiencies unchanged. On most rural and many urban highway miles, the level of service measured by traffic speed and density would be maintained at current levels. In the large urban areas, peak-hour Interstate traffic would continue to

operate with a level of service at or near capacity. In the 50 most populous urban areas, however, further deterioration in peak-hour Interstate system performance would be expected. Congestion in these urban areas would increase as traffic increasingly exceeds Interstate lane-mile capacity. As the level of service deteriorates on the Interstates, the roads that feed into them would become more congested. The increased congestion, adding to the currently estimated $39 billion in time and fuel wasted annually in these 50 large urban areas, would also adversely affect air quality.

Highway and Bridge Funding FY 1994-1995

In view of the highway and bridge needs outlined above, there can be little question of the need for full funding of ISTEA. Highway program funding for the so-called core programs (such as the National Highway System, the Surface Transportation Program, the Interstate Completion and Maintenance Programs, the Bridge Program, and the Congestion Mitigation and Air Quality Improvement Program) is subject to authorization limits imposed by ISTEA and to obligation ceilings imposed both by ISTEA and by the appropriation process. Some programs authorized by ISTEA--Minimum Allocation, Emergency Relief, and the Special Projects--are placed outside the obligation ceiling. Since the amounts authorized for these programs are contractual obligations of the federal government, they are effectively insulated from budget cuts.

In FY 94 total highway and bridge program appropriations were $19.655 billion, which amounted to 96 percent of the $20.469 billion authorized in ISTEA. The core programs, under an authorized ceiling of $18.362 billion, received appropriations of

$17.590 billion. The funds authorized for the programs outside the ISTEA obligation ceiling are estimated amounts which can be carried over until expended. If obligations are higher than estimated levels, the additional outlays are taken from carried-over funds. If funds are not available from prior fiscal years, the additional outlays occur in the following fiscal year. In FY 94 the Emergency Relief Program utilized its authorized level of $100 million. The outlays for the Minimum Allocation Program were $322 million more than the $803 million estimated in 1991 to be needed for full funding, and the outlays for Special Projects were $319 million less than the $1.159 billion 1991 full funding estimate.

The President's FY 95 total highway program budget proposal is $20.069 billion. The proposal is based on full funding of the core programs at the ISTEA obligation ceiling of $18.332 billion. It also proposes an additional $1.637 billion to cover the Minimum Allocation and Special Projects programs which, contrary to ISTEA, it proposes to include under the obligation ceiling, which would be increased to $19.969 billion. The $1.637 billion is $267 million below the $1.904 billion estimated in 1991 to be needed for full funding of these programs. If these programs were put under the obligation ceiling, they would become subject to budget cuts in the same way that core programs under the obligation ceiling are now. The $100 million for the Emergency Relief Program would be the only funds not under the obligation ceiling.

The Budget Committee's H. Con. Res. 218 "...strongly supports fully funding...." the federal-aid highway program at the $20.396 billion level authorized under ISTEA, opposing any cuts to the program. The Budget Committee's report (H. Report 103-428)

notes that the increased investment in transportation infrastructure, through the highway program, will be important for productivity gains in the economy.

TABLE 1

Federal Highway and Bridge Program Funding
(in billions of dollars)

	FY 94		FY 95		
	ISTEA Authorized	Appropriation Enacted	ISTEA Authorized	President's Budget	House Budget Res.
ISTEA Obligation Ceiling	18.362	17.590	18.332	19.969**	18.332
Emergency Relief*	.100	.100	.100	.100	.100
Minimum Allocation*	.803	1.125	.803	**	.803
Special Projects*	1.159	.840	1.101	**	1.101

* funding for these programs are not subject to the Appropriations Committee ceiling (funding for the Minimum Allocation and Special Projects programs are estimates)

** the President's proposed budget included the Minimum Allocation and Special Projects Programs under the ISTEA obligation ceiling

TRANSIT INFRASTRUCTURE NEEDS

According to the Secretary of Transportation's 1993 Status Report, the average age of transit buses currently exceeds the federally recommended usable life by 20 to 35 percent. Between 20 and 30 percent of rail transit facilities and maintenance yards are in poor condition. The estimated cost of eliminating these backlogged transit deficiencies is $18 billion. The annual cost of replacing and maintaining urban, rural, and special services bus fleets alone is estimated to be $2.2 billion (1992 dollars).

A March 1994 membership survey released by the American Public Transit Association (APTA) estimated that more than $7 billion in federal funds could be quickly obligated above existing program levels. This number represents only the immediate backlog of unmet transit needs. APTA estimates that an investment of $11 billion per year would be required to restore transit to its pre-1980s level.

The 1993 Status Report from the Secretary of Transportation considers alternative investment strategies for transit, and estimates the costs both to maintain and to improve their condition. The investment strategy that is designed merely to maintain transit systems at current levels of service, and to meet the transit requirements of the Americans with Disabilities Act, is estimated at $3.9 billion per year. This investment scenario would maintain rail and bus facilities and equipment in their current state of repair; however, existing backlogs requiring replacement or correction of deficiencies would be unaffected. At this investment level, transit vehicles would be added to accommodate the current growth in transit passenger miles of 0.8 percent per year. Transit vehicle replacements would continue at their current rate. However, this rate is considered slightly lower than optimal, and transit fleet maintenance costs would be expected to rise as the number of transit vehicles exceeding the federally recommended usable life increases.

Transit Funding FY 1994-1995

Total transit program appropriations for FY 1994 were $4.380 billion, which amounted to 85.5 percent of the $5.125 billion authorized in ISTEA. The formula grant program, which includes Section 9 urban and Section 18 nonurban formula grants, Section 16 transportation services for the elderly and disabled, as well as Section 9 operating assistance, received $2.415 billion of its $2.865 billion ISTEA authorization, or 84.2 percent. Similarly, the appropriation of $1.783 billion for the Section 3 discretionary and formula capital program, providing funds for rail starts and modernization and bus capital programs, fell short (87.1 percent) of the $2.050 billion authorized by ISTEA. The President's FY 95 transit program budget proposal of $4.562 billion is $182 million more than FY 94 funding levels. It proposes to fully fund the formula grant program at the FY 95 ISTEA authorization level of $2.865 billion. Included in that figure, however, is the proposal to reduce federal operating assistance by $200 million from the FY 94 appropriation of $802 million. The Administration is also recommending $1.517 billion for the discretionary and formula capital program, which is $533 million under the FY 95 ISTEA authorization. The major portion of the reduction would be achieved by cutting $420 million of the $820 million authorized for new rail starts.

The Budget Committee's H. Con. Res. 218 supports the President's proposal where it increases funding for transit, and essentially retains funding of operating assistance at the FY 94 level. H. Con. Res. 218 recommends a total of $4.562 billion in obligational authority for transit activities, including the Washington METRO. It adds back the $200 million the President's budget would have removed from federal operating

assistance, and reduces the request for Section 9 urban capital grants by $400 million. Even with the Section 9 reduction, however, this capital program would still be funded at $1.650 billion, which is $225 million more than the FY 94 funding level.

TABLE 2

Transit Program Funding
(in billions of dollars)

	FY 94		FY 95		
	ISTEA Authorized	Appropriation Enacted	ISTEA Authorized	President's Budget	House Budget Res.
Formula Grants	2.865	2.415	2.865	2.865	2.665
— Section 9	2.643	2.227	2.643	2.650	2.450
Section 3	2.050	1.783	2.050	1.517	1.517
Administrative/Research and Development/Other	.210	.182	.210	.180	.380*
TOTAL**	5.125	4.380	5.125	4.562	4.562*

* also includes funding for Washington METRO, which in previous fiscal years has been $200 million

** the total includes the amounts for Section 3, Administrative and Research and Development, and the Formula Grants which includes the amounts for Section 9 Urban Formula Grants

FINANCING INFRASTRUCTURE NEEDS

According to the 1993 report of the Commission to Promote Investment in America's Infrastructure, Financing the Future, public sector spending on infrastructure in the United States amounts to more than $140 billion annually. Despite that annual spending, projections in various studies of the additional funding needed to meet critical infrastructure needs range from $40-$80 billion annually. Traditional infrastructure

financing sources -- government grant programs, tax exempt bonds, and private capital -- will be unlikely to satisfy current and projected infrastructure needs. Although current infrastructure programs may be able to be strengthened to provide more bang for the buck, it is likely that new infrastructure financing sources will need to be developed in the future. Several alternative financing options are being considered: establishment of a new, federally chartered financing entity, i.e., a "national infrastructure corporation;" creation of new investment options for institutional investors, including securities issued or guaranteed by a national infrastructure corporation; and creation of an investment category within the overall unified federal budget to increase investment spending by providing a framework for developing, displaying, and analyzing data needed to consider the investment effects of budget decisions. A later subcommittee hearing will explore potential new sources of infrastructure financing.

HEARING AGENDA

The following witnesses will present testimony at the Subcommittee's April 21st hearing on Highway, Bridge, and Transit Infrastructure Needs:

* Mr. Rodney E. Slater
  Administrator
  Federal Highway Administration
  U.S. Department of Transportation

* Mr. Gordon J. Linton
  Administrator
  Federal Transit Administration
  U.S. Department of Transportation

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- Mr. Richard Voith
  Board Member
  Southeastern Pennsylvania Transportation Authority
  representing
  American Public Transit Association

- Mr. J. Douglas Hartley
  Executive Director
  West Virginia Public Transit Association
  representing
  Community Transportation Association of America

- Mr. Francis B. Francois
  Executive Director
  American Association of State Highway
  and Transportation Officials

- American Road and Transportation
  Builders Association

- Mr. Robert Desjardins
  Executive Vice President
  Cianbro Corporation
  representing
  Associated General Contractors

- Mr. Raymond Chamberlain
  Senior Vice President for Freight Policy
  American Trucking Associations

- Associated Builders and Contractors

- Mr. Anthony Chargin
  Deputy Associate Director of Energy
  Lawrence Livermore National Laboratory

HIGHWAY, BRIDGE, AND TRANSIT INFRASTRUCTURE NEEDS

THURSDAY, APRIL 21, 1994

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:35 a.m. in room 2167, Rayburn House Office Building, Hon. Robert A. Borski (chairman of the subcommittee) presiding.

Mr. BORSKI. The subcommittee will come to order.

The subcommittee today is examining the condition of our Nation's essential surface transportation network and the funding needs of the transit and highway systems that play a vital role in virtually every part of our lives.

This hearing is the second in our series of hearings to review our Nation's transportation and environmental infrastructure: its condition, the available funding, and the economic impact of failing to provide adequate funding. We also plan to look at the potential for future funding and alternative methods of financing.

The basic figures tell the story of the importance of the highway and transit infrastructure. Americans travel more than 2 trillion vehicle miles annually and the amount of travel is increasing rapidly. Even transit passenger miles increased between 1980 and 1990 despite the starvation diet of Federal aid to which transit was subjected.

For the past four decades, the Federal Government has made a massive commitment to upgrading the surface transportation system through what is now known as the Federal Transit Act and through the Federal–Aid highway program. While construction of the interstate highway system resulted in major improvements in the ability to move people and goods, there are many problems that have not been addressed. Our Nation's transit systems are barely surviving, urban congestion is a growing problem, and the interstate highways themselves are aging and in frequent need of repair.

Traffic congestion in urban areas is a continuing and growing problem that must be addressed. It was the Department of Transportation that reported last year the cost of congestion through delays and fuel consumption in the 50 most populous urban areas was more than $39 billion.

The Intermodal Surface Transportation Efficiency Act of 1991 was clearly designed to address some of these problems through

new planning and funding procedures. A serious question that remains is, What is the extent of the progress since ISTEA?

We are facing some very big numbers in the future to meet our infrastructure needs. The Department of Transportation estimates that $212 billion is needed to eliminate highway backlogs, $78 billion is needed to eliminate bridge backlogs, and $18 billion is needed to eliminate bus and rail transit deficiencies.

It especially concerns me that DOT says that there is virtually no funding plan that will meet the transportation needs of the Nation's largest urban areas. A very troubling question is whether the Highway Trust Fund is being used fully and effectively to address the problems of the highway and transit infrastructure.

The Department of Transportation reports a balance of more than $10 billion in both the highway and transit accounts. This money is being paid by taxpayers for infrastructure improvements and it should be used for that purpose.

I am appreciative of the great strides that have been made during the past 2 years in funding of infrastructure needs, especially transit. However, with tremendous needs still existing and the high balances in the trust fund, even more could be done by the Federal Government to meet our infrastructure needs.

I am happy to have both Federal Transit Administrator Gordon Linton and Federal Highway Administrator Rodney Slater, part of the Administration's very impressive leadership team at the Department of Transportation, here today to present their views.

Mr. BORSKI. I now yield to my distinguished friend from Oklahoma, Mr. Inhofe.

Mr. INHOFE. Thank you, Mr. Chairman.

As I reviewed the testimony, I was struck on how big a job we have ahead of us—as we will hear from our witnesses—just to maintain the level where we are today would take $52 billion each year for the next 20 years. When you compare that to the $26 billion Federal dollars that were spent in 1991 you can get an idea of the magnitude and the difficulty of the problem we are facing. We are going to have to make some hard choices. I think we may have to rethink how we build and maintain our transportation infrastructure, panel we may have to rethink how we finance it.

I trust this hearing will shed some light on how we can do that by leveraging our scarce resources today to yield quality results for the next generation of Americans.

Again, thank you, Mr. Chairman. And let me congratulate Mr. Slater on his victory in being number one in the big tournament. [Laughter.]

Mr. BORSKI. The Chair thanks the gentleman.

The gentlewoman from Virginia, Ms. Byrne.

Ms. BYRNE. Mr. Chairman, I would like to thank you for holding this second in a series of hearings on transportation infrastructure and I look forward to future hearings on this subject, especially when we begin examining alternative forms of financing transportation projects. I also hope that the chairman will incorporate the idea of value engineering in the discussion of funding alternatives.

Today, we will focus on our Nation's transportation needs. I hope that we will not miss one very important issue: the need to look at the big picture and develop fully integrated transportation sys-

tems. Many of the members on this committee, like myself, represent regions that are experiencing rapid economic development and growth. What we are doing is that even if adequate funding exists to accommodate growth, we couldn't build the roads fast enough to keep up with our transportation needs.

It is increasingly clear that we need to find ways to link all modes of transportation together to create a comprehensive system of roads, buses, and rail that provide a variety of transportation options. However, many people are still taking a single-minded approach to solving our transportation problems.

Recent comments by some members on the Transportation Appropriations Subcommittee state that the current Metro system in the Washington metropolitan area had reached the fullest extent of its development. This type of thinking narrows our views of possible solutions. We need to talk about not only furthering development of Metro to areas that are becoming commuter suburbs, but we also need to discuss the extension of rail to Dulles to make the current system multimodal.

I will submit the rest of my testimony for the record, Mr. Chairman, but I do again thank you for holding these hearings, and particularly with the idea of looking to the big picture in terms of being, as we like to say now, multimodal.

[Ms. Byrne's prepared statement follows:]

LESLIE L. BYRNE
11TH DISTRICT, VIRGINIA
COMMITTEE
PUBLIC WORKS AND TRANSPORTATION
SUBCOMMITTEES
SURFACE TRANSPORTATION
WATER RESOURCES AND ENVIRONMENT
INVESTIGATIONS AND OVERSIGHT
COMMITTEE
POST OFFICE AND CIVIL SERVICE
SUBCOMMITTEE
COMPENSATION AND EMPLOYEE BENEFITS

Congress of the United States
House of Representatives
Washington, DC 20515-4611

WASHINGTON OFFICE
1609 LONGWORTH BUILDING
WASHINGTON, DC 20515
(202) 225-1492
FAX (202) 225-2274
DISTRICT OFFICE
7620 LITTLE RIVER TURNPIKE
SUITE 203
ANNANDALE, VA 22003
(703) 750-1992
FAX 750-2688

CONGRESSWOMAN LESLIE L. BYRNE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

APRIL 21, 1994

Mr. Chairman:

I would like to thank you for holding this second in a series of hearings on our nation's transportation infrastructure. I look forward to future hearings on this subject, especially when we will begin examining alternative forms of financing transportation projects.

I also hope that the chairman will incorporate the idea of Value Engineering in the discussion of funding alternatives. This is a time-tested process that we have used very effectively in the Commonwealth of Virginia to save valuable transportation dollars while improving the quality of transportation projects.

Today, as we focus on our nation's transportation needs, I hope that we will not miss one very important issue -- the need to look at the big picture and develop fully integrated transportation systems. Many of the members on this committee -- like me -- represent regions that are experiencing rapid economic development. What we are finding is that, even if adequate funding exists to accommodate the growth, we couldn't build roads fast enough to keep up with our transportation needs.

It is becoming increasingly clear that we need to find ways to link all modes of transportation together, to create a comprehensive system of roads, buses and rail that offer a variety of transportation options. However, many people are still taking a single-minded approach to solving our transportation problems.

I was disappointed by the recent comments from some members of the Transportation Appropriations Subcommittee that the current Washington Metro system has reached the fullest extent of development. This type of thinking narrows our views of possible solutions. We need to talk about not only furthering development of Metro to areas that are becoming commuter suburbs, but we also need to discuss the extension of rail to Dulles to make the current system multi-modal.

These are the type of programs that are needed in order to move transportation into the next century. We have to find ways to tie our airports and roads together, and this has to be done through a master transportation plan that utilizes rail. A rail connection to Dulles, using the Metro's orange line as a starting point, will connect the region's air hubs and be the final lynch pin that holds our transportation network together.

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While I was happy to hear from Secretary Pena in my meetings with him about the administration's new emphasis on capital development -- which has not existed for the past twelve years -- I have been concerned about the lack of emphasis placed on commuter rail projects as a national priority. The fact that commuter rail or rail in general still lacks significant funding is disturbing.

I hope that Mr. Linton can address why the administration has not placed a greater emphasis on developing commuter rail, and why the administration felt that it was not necessary to propose new commuter rail transit projects. I would also like to know what type of timetable DOT has in mind for completing already existing projects like light rail to Dulles.

Finally, I would like to encourage my colleagues and the witnesses to continue thinking of transportation systems not as separate pieces but as a multi-modal network using a comprehensive master plan that will allow developing regions to grow into the next century.

Mr. BORSKI. The Chair thanks the gentlewoman.

The gentleman from Michigan, Mr. Barcia.

Mr. BARCIA. Thank you very much, Mr. Chairman, for holding this series of hearings on our Nation's infrastructure needs.

In the coming weeks, I look forward to hearing from our witnesses and participating with you in this important process. In this time in our history when we are trying to restore fiscal responsibility to our Federal Government, we must not forget how important infrastructure is to our economic health and America's future. Being unrealistically tight with our investment dollars will not help our children, it will add to the burden of debt that we have placed upon them, requiring billions upon billions of dollars in maintenance, repair, and construction costs in the future.

I am also heartened that you have brought financing alternatives onto the agenda of these hearings. I have been a long supporter of capital budgeting and have cosponsored Mr. Wise's bill. I hope that we can learn what our best options are in appropriately scoring investment and spending on the Federal level.

Thank you.

Mr. BORSKI. The Chair thanks the gentleman.

The gentleman from Wisconsin, Mr. Barca.

Mr. BARCA. I, too, Mr. Chairman, want to thank you for taking up the challenge of studying our Nation's infrastructure needs. There is no question that this is one of the most critical challenges that lies before the United States Congress. We have had a great deal of discussion over the course of the past couple of months of our road conditions and the need for making rail improvements.

One area of bridges, though, is something that only recently my staff has begun to look into. We have found that in the counties of my district, in the 1st Congressional District of Wisconsin alone, we have 344 bridges that have been judged to be structurally deficient or functionally obsolete by the National Bridge Inventory that took place this year. I appreciate that effort on the part of the Department of Transportation.

Numerous studies have shown that infrastructure investment promotes economic growth, creates jobs, enhances productivity, and increases our ability to compete. Yet we also know that the total Federal infrastructure investment in 1992 is down by 9.1 percent from a decade ago.

We need to invest more heavily in our infrastructure. This will help to create jobs. It will also help to promote increased safety. I applaud your efforts in holding these hearings and to lending my strong support to your efforts, Mr. Chairman.

Mr. BORSKI. The Chair thanks the gentleman very much.

The gentlewoman from Michigan, Ms. Collins.

Ms. COLLINS. Thank you.

I want to begin by thanking the chairman, my good friend Bob Borski, for holding this hearing, and for his vigilance in addressing the needs of America's transportation infrastructure. We cannot have a strong economy without a sound transportation system. Coming from Detroit, where unemployment is 12 percent and among some groups—such as African–Americans—as high as 40 percent, I want to do all I can to invigorate the economy.

Also, let me thank Mr. Slater and Mr. Linton for being here today. I an see that in the true spirit of intermodalism, you are sharing the same witness table. Thank you for arranging your busy schedules to be here today.

The purpose of this hearing is to examine transportation infrastructure needs. In Detroit, the city that can boast of the Nation's very first freeway, all we have are needs. Our freeways are crumbling, our bridges and overpasses are literally falling down around us, and despite our best efforts we still lack a light rail system.

There are two areas I want to focus on today. First, I want to find out how the Department of Transportation goes about approving or disapproving State transportation plans, because I believe that urban and border areas have, in many cases, been severely shortchanged under ISTEA.

As for urban funding, this committee wisely included language in ISTEA requiring that MPOs take a more prominent role in transportation planning. Yet as this subcommittee discovered last fall, State DOTs have not yielded an inch in many cases. As for border infrastructure, Administrator Slater's excellent report on border crossings and trade corridors definitively lays out the special problems faced by border communities. I want to find out if these issues, which are important both to me and to many of my colleagues, are addressed in the approval of State plans. If not, why not?

Second, I hope to see what kind of vision the Administration has for light rail transit systems. Clearly, it is not enough to invest money only in existing systems. We must continue to expand the scope of public transit in areas like southeast Michigan. While not every public official in Michigan is enlightened enough to see the wisdom of light rail in Detroit, I was pleased to see the Woodward Light Rail Corridor included in the Federal Transit Administration's most recent report on funding levels and allocations. I hope you share my vision for light rail in congested and polluted areas like Detroit.

Again, I'm glad you're here, and I look forward to some very interesting discussion.

Mr. BORSKI. I have a statement from the chair of the full committee on Public Works and Transportation, Mr. Mineta, to appear in the record at this point.

[Mr. Mineta's prepared statement follows:]

NORMAN Y. MINETA, CHAIR

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

HEARING ON
HIGHWAY, BRIDGE, AND TRANSIT INFRASTRUCTURE NEEDS

APRIL 21, 1994

Today we meet for this Subcommittee's second hearing on infrastructure needs, focusing on needs for surface transportation infrastructure. The Department of Transportation estimates that we have $290 billion in unmet highway and bridge needs, and that it would cost $59 billion per year to remedy these infrastructure gaps. In transit, we have $18 billion in unmet needs, and it would require almost $7 billion per year to remedy them.

We have persistently failed to invest enough in transportation infrastructure since 1980. As a result, the burden of unmet needs has steadily grown. And these unmet needs have real consequences. Congestion costs due to delays and wasted fuels cost our nation $39 billion per year. Underinvestment in transit is leading to an aging transit vehicle fleet with increased maintenance costs and downtime.

While funding levels for surface transportation infrastructure are improving, they are still far below what is needed even to maintain our infrastructure in its current dilapidated state, much less to reverse the effects of more than a decade of neglect. Even full funding of ISTEA, which we will come close to achieving this year, will not meet all the needs that clearly present themselves. Nor is the current budgetary

stringency which prevents adequate funding likely to disappear anytime soon.

As a result, we must work creatively with the few dollars we have. We have to plan carefully to focus on meeting the national, intermodal needs that ISTEA was enacted to address. We have to make full use of innovative technology to get more bang out of our highway and transit buck. And we have to implement quickly the management systems mandated by ISTEA so as to manage and maintain our highways and transit systems in a way that will reduce the need for constantly rebuilding our infrastructure.

These times of financial stringency call for outstanding managers at our Federal Transit and Highway Administrations. I welcome Gordon Linton and Rodney Slater to the Subcommittee today. They have provided outstanding leadership to our surface transportation program, and I look forward to their testimony, as well as that of the other witnesses.

Mr. BORSKI. I would like also to include in the record at this point, a statement from Representative Blackwell of Pennsylvania.

[Mr. Blackwell's prepared statement follows:]

STATEMENT OF CONGRESSMAN LUCIEN E. BLACKWELL

Mr. Chairman, I want to congratulate you for assembling this timely and most important hearing.

Investment in the infrastructure of the United States—our highways, bridges and mass transit systems—is vital to the future growth of this nation. A solid infrastructure helps improve productivity. Improved productivity creates jobs, which are sorely needed, increases our ability to complete in an expanding global market and, ultimately, results in a better way of life for all of our citizens.

Japan is spending massively for infrastructure investment.

I am pleased that the Intermodal Surface Transportation Efficiency Act [ISTEA] would be "fully funded" under the budget resolution.

In the Budget Committee, however, we had to fight for rapid transit operating subsidies, while we saw funding for many infrastructure projects fall in the face of spending caps and the deficit reduction movement.

It should concern all of us that approximately 235,000 miles of highway in America is an mediocre or poor condition and in need of immediate repair, or that 118,000 bridges are structurally deficient, while 81,000 are functionally obsolete.

Mr. Chairman, these are difficult times, however, we must find a way to increase investment in our infrastructure. These are most important hearings. Much can be gained, however, much can be lost.

Mr. BORSKI. We would like to welcome our first panel this morning: Mr. Gordon J. Linton, Administrator, FTA; and Mr. Rodney Slater, Administrator, Federal Highway Administration.

[Witnesses sworn.]

Mr. BORSKI. We want to again welcome each of you, particularly. I know Mr. Linton has advised me before how much he is travelling across the country he feels like a part-time resident of California. Mr. Slater has just come back from a whirlwind 14-State, 14-day tour and just arrived very late last night. We are most appreciative of you being here this morning.

Mr. Linton, would you begin, please?

TESTIMONY OF GORDON J. LINTON, ADMINISTRATOR, FEDERAL TRANSIT ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION; AND RODNEY E. SLATER, ADMINISTRATOR, FEDERAL HIGHWAY ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION

Mr. LINTON. Thank you very much, Mr. Chairman.

I would like to thank you for providing me with the opportunity to appear before you today to discuss transportation infrastructure needs. Let me begin by reiterating what Deputy Secretary Downey said in appearing before your initial hearing a few weeks ago, and commend you for holding this series of hearings to highlight the importance of infrastructure to the Nation's well-being and to the quality of life for all Americans.

Let me also say, Mr. Chairman, that I recognize the value and importance of mass transit and the role that it plays in urban areas. I look forward to working with you and members of the Committee to make sure that we do everything we can to meet the basic mobility needs of our citizens.

This committee, Mr. Chairman, has certainly played a critical part in this regard through its role in passing the Intermodal Surface Transportation Efficiency Act of 1991. Let me quote from that

significant legislation that "significant improvements in public transportation are necessary to achieve national goals for improved air quality, energy conservation, international competitiveness, and mobility for elderly persons, persons with disabilities, and economically disadvantaged persons in urban and rural areas of the country."

In that context, Mr. Chairman, let me respond to a few issues dealing with infrastructure needs that you have asked us to address.

Let me first say a few words about transit infrastructure in light of the recent Los Angeles earthquake. In fact, Mr. Chairman, I testified just 2 weeks ago before the full Committee in a field hearing in Los Angeles on that matter.

Let me say first of all the good news is that within a short period of time of the earthquake 94 percent of the buses were in operation. But within 24 hours of the earthquake 99 percent of bus operations in the Los Angeles area were in operation.

I am also happy to report that over the months prior to the earthquake there were a number of questions raised about the structural integrity of the Red Line rail tunnel. Mr. Chairman, I would like to note to you and members of the Committee that within 48 hours of the earthquake I was in Los Angeles. I walked the Red Line tunnel to inspect some of the major aspects of that tunnel. I am also happy to report that a panel of experts was put in place to examine the structural integrity of the Red Line tunnel.

It is interesting to note that engineers were working in the tunnels at the time that the earthquake took place at 4:00 in the morning. They were in the subway tunnels inspecting the tunnels, and doing boring as a result of the panel's investigation, at the time the earthquake took place.

The good news is that the panel's report indicates that there is structural integrity of the tunnels, that they withstood all the earthquake's tremors, and that transit within the tunnels was operational within hours of the earthquake. So our investment in that area has been well-founded and it has been operating very well.

It is also good news, Mr. Chairman, to indicate that as you and others have talked about the National Transportation System as the adjunct to the National Highway System, that the earthquake is a clear example of the importance of having multimodal transportation in our corridors. It is a clear example of the necessity of having significant transportation corridors of highways, transit, and all the modes. It is clear that the ability to move people in the Los Angeles area could not have been accommodated if they did not have in place a major transit infrastructure to complement and support the highway infrastructure that was badly damaged in the earthquake.

An interesting side note, Mr. Chairman, is that the MetroLink service during the earthquake provided tremendous support to those who were commuting downtown to Los Angeles who could not get there as a result of the highway damage. One line in particular, Mr. Chairman, the Santa Clarita line—prior to the earthquake the daily patronage on that line was approximately 1,000 riders. After

the earthquake, the ridership rose to about 22,000 riders on that one line.

We are hoping that we can maintain some of the patronage on the MetroLink, as was the case after the earthquake in the Bay Area. During that period of time, the Bay area was able to maintain about 20 percent of the ridership that was diverted to the BART system as a result of the earthquake. We are hoping to maintain the same type of ridership as a result of the quake in Los Angeles.

Let me refer to last year's Department report, The Status of the Nation's Highway, Bridges, and Transit Conditions and Performance. It was the first such report formally combining both highway and transit system information. The transit portion was based on FTA's 1992 Transit Performance and Conditions Report.

The 1992 report concluded that for mass transit to maintain its current condition and performance, an annual capital expenditure of $3.9 billion per year would be necessary. It also stated that to improve its conditions and performance, an annual capital expenditure of $3.6 billion would be necessary. This would come to a combined capital expenditure of $7.5 billion a year. Of this amount, $2.1 billion would be needed to annually eliminate the backlog and $1.5 billion per year to increase ridership.

Mr. Chairman, we have not yet completed our estimates of needs for the 1994 report. We expect, however, to submit that report to Congress this summer. But I can tell you that we anticipate numbers greatly higher than those in our 1992 report. Among other things, we expect to estimate needs based on scenarios in which both highway and transit performance are maintained and improved.

FHWA estimates that a significant share of highway travel demand, 34,000 lane miles over 20 years, will have to be handled by transportation systems management, transportation demand management, and transit rather than highway construction. The transit estimates will reflect the need to improve our use of transit as a travel demand management tool. We expect that the estimates to maintain the physical conditions of the bus and rail facilities will be somewhat higher than was estimated in the 1992 report.

This is primarily due to inflation, more recent data, and more complete treatment of the cost of replacing rail vehicles and meeting the Clean Air requirements.

The cost of using alternative fuels to comply with the Clean Air Act amendments were estimated but not included in the totals in the 1992 report. Based on the Energy Policy Act, we will at least partially have to include those estimates in our 1994 report.

Our preliminary analysis indicates that the conditions of rail system facilities have improved somewhat so that our estimate of the rail facilities backlog should be reduced significantly. However, overall the cost to improve rail conditions should go down slightly.

Again, Mr. Chairman, and members of the Committee, these are preliminary observations only. There is a report that we will submit to the Congress that will provide our definite position on this matter.

Mr. Chairman, I have talked about our needs estimate. Let me discuss with you and the other members of the Committee how the Clinton Administration intends to address those needs.

At a time of fiscal austerity across the Federal Government, when Federal programs are being considered for elimination, we in the Department are very pleased that our budget proposal represents the largest transit budget ever proposed to Congress, $4.8 billion. Our budget proposal would increase capital spending on the transit side from $2.87 billion as originally enacted in fiscal year 1993 and $3.5 in 1994 to about $3.97 billion. This is an increase of 4 percent, or $179 million, over the current fiscal year. It also includes an increase of 25 percent, or $962 million, over the budget the FTA was operating under in fiscal year 1993.

We have fulfilled our promise, Mr. Chairman, to fully fund our formula programs at the ISTEA authorized level. We are requesting a 19 percent increase in Federal formula funds over—previous year for a total of $2.9 billion.

With State and local match, this will increase annual capital spending from about $5.1 billion to $7.2 billion. This is enough to maintain conditions and performances as well as to improve conditions as defined in our 1992 needs report. I think it is important to understand that that report was reflective of information from 1992. As indicated earlier, our current report will most likely have a needs estimate that surpasses those of our 1992 report.

Mr. Chairman, I would like also to mention that there are other capital resources which we believe are available to our grantees as well. From the perspective of the transit program, undoubtedly the most significant and innovative change mandated by ISTEA is what we call the flexible funding provision. Specifically, Congress in ISTEA provides a potential $70 billion in flexible funds over 6 years for transit or highway projects. In fiscal year 1992, approximately $300 million was transferred for transit use. In fiscal year 1993, some $470 million has been transferred. And approximately $200 million has been transferred to date this year. This represents close to $1 billion in additional capital funding for our transit program.

Mr. Chairman, you have also asked us to address the use of State and local and private resources available for dealing with the revitalization of transit infrastructure. We recognize that the Federal role is but one part of the mix in terms of funding mass transit. State and local sources of funding will provide some $2.8 billion in capital funding for mass transit this fiscal year and will continue to provide the majority of local operating costs. Since at the Federal level we provide only 5 percent of total annual operating costs, 95 percent of those operating costs are being provided by State and local funds.

Mr. Chairman, we will also continue to encourage our recipients to continue to use bonding, leasing, joint development, and other innovative measures to begin to leverage Federal funds as well.

Mr. Chairman, you have also asked us to address what can be done to facilitate infrastructure improvements. We are working with the Secretary's Office and FHWA in identifying innovative financing options available to the transportation industry.

Also, Mr. Chairman, as I noted earlier, the ISTEA funding provisions are used more each year. We expect the use of these funds to increase over the life of ISTEA. We will continue to work with State and local officials to make sure that they are made aware of the funding options available to them. In that regard, we will continue to have conferences, meetings, and provide other types of technical assistance so that our State and local partners are aware of the funding prospects available on a State-by–State basis in the ISTEA flexible funding.

We also intend to continue to use new technology. It is our view that breakthroughs in computers and communications and defense-related technology can help to increase highway and transit capacity and efficiency without major new highway expansion. For example, a number of our grantees are beginning to use global positioning systems technology to help in their fleet management.

We also have a significant initiative in our budget proposal, Mr. Chairman, which we think can be quite useful in making transit more attractive. That new initiative is called "livable communities". We believe that communities that are designed with a mix of employment, housing, and retail nearby, as well as within walking distance of transit stops, can increase the number of trips made by mass transit, bicycles, and walking, thereby decreasing single occupant auto trips. Such models can decrease congestion, reduce air and noise pollution, and improve the general mobility and accessibility of our population. For instance, locating housing near transit can decrease the need for second or third vehicles.

We have included in our 1995 budget proposal $30 million to be used as supplemental funding for transit projects that fully involve the neighborhood, provide access to such services as day care facilities and convenience stores at transit facilities, and encourage mixed use neighborhoods which include residential, commercial, and office space. In short, the livable communities initiative is designed to encourage land use, urban design, and planning to emphasize transit use.

I will add to that, Mr. Chairman, my view that as we attempt to rebuild America and continue to invest in our infrastructure and begin to make sure that we make strategic investments, we must be very concerned about suburban sprawl and about trying to make sure that we have linked economic opportunities with transportation opportunities that provide access to those in our communities who need access to those opportunities.

One of the things that we need to give considerable consideration to is how—as we rebuild communities and cities—we use land use planning, how we begin to develop and redesign our cities so that we minimize the dependency on the automobile, and we enhance the use of our investments in our transit infrastructure.

I think the livable communities initiative we are proposing to the Congress moves in that direction. It engages our city planning offices, our mayors, and all those who are involved in rebuilding and designing our cities to begin to emphasize transit-based development, access to pedestrian walkways, and maximize the utilization of our Federal dollars by trying to make sure that we encourage design and planning to emphasize integrating transit in the rebuilding of our cities and our rural areas around the country.

I just want to emphasize how very important the livable communities are that we have included in our budget.

We also think there are many provisions in ISTEA that will also provide opportunities to reduce congestion. One of those is the opportunity to implement congestion pricing. ISTEA provides for that opportunity and we hope that in the years to come we will be implementing additional congestion pricing and initiatives that will give us some relief in the congestion that exists on our highways.

Mr. Chairman and members of the committee, I also have to bring attention to our transit benefit. The Energy Policy Act of 1992 increases the transit tax-free benefit to $60 per month and places a cap of $150 a month on employer tax benefits for parking. We are undertaking efforts to get the word out to employers to make them aware of this benefit and to begin to level the playing field between the costs associated with driving as opposed to taking transit.

We are proud of the fact that DOT was the first Federal agency to fully implement the Federal transit benefit program. I think I can note with a great deal of pride that these two Administrators who appear before you are consistent users of the transit benefit package. I am glad to say that my colleague, the Federal Highway Administrator, also uses the Metro rail system here in the Washington, D.C. area and so do I. We believe that we have put our efforts in our own uses of those facilities. We are great believers and supporters of the transit benefits made available under our provision.

Another provision that we think merits considerable utilization is cash-out parking. As a part of a strategy to reduce global warming, President Clinton has proposed requiring employers who provide subsidized parking to their employees to offer them instead a taxable cash allowance. This would make more explicit to these employees the cost of this parking and entice many to take cash instead, which then can be used for transit, car pools, van pools, or other alternatives to the single occupancy automobile.

Mr. Chairman, you asked us to address research studies that assess the effect of mass transit on air quality. Reports over the last several years on the effectiveness of transportation control measures in reducing mobile source emissions have generally found that the measures have positive air quality effects, although very small benefits, when considered in the context of total vehicle emissions produced in a large metropolitan area or region.

Several of these studies have assessed transit improvements ranging from increased subsidies of fares to new transit infrastructure like heavy and light rail systems. In these studies, technological measures such as enhanced vehicle inspection, maintenance programs, and clean fuel programs emerge as the most cost-effective air quality measures. This is not surprising considering this relatively small mode share for transit in most cities and the growing reliance on the single-occupant vehicles nationwide, as revealed by the 1990 census data.

However, we believe, Mr. Chairman, as was stated in the first DOT/EPA report to Congress on the progress in implementing the 1990 Clean Air Act amendments, transit can play a greater role as an effective air quality measure if new or enhanced service is put

in place in conjunction with complementary measures which act as disincentives to single-occupant vehicle use. To date, there has been very little practical experience with these types of demand management measures. We believe, however, that over the next 5 years some polluted metropolitan areas may implement some of these strategies as they strive to meet Clean Air Act requirements. Transit will, no doubt, have a larger role to play in areas where limits on the use of the private automobile are being proposed.

Finally, Mr. Chairman, you asked what we are doing to reduce the imposition of unfunded Federal mandates and minimize their effect on State and local infrastructure investment strategies.

As noted, Mr. Chairman, we have presented Congress the largest transit budget in history, which clearly shows where the Clinton Administration stands on transit. Our intent is not to impose new requirements on our grantees, but rather to try to minimize existing ones to the extent possible.

One of the first tasks that I have undertaken as Administrator is a strategic planning effort in my agency which involved all of our staff. We are focusing on what we can do to better serve our customers. We recognize that even with our increased budget request that we can also increase the burdens that we put on local grantees if we do not reduce the cost of operations, the cost of the many burdens that we often put on them with the paperwork requirements.

We are looking at broad and better ways of reducing and minimizing the paperwork with better focus on meeting the mobility needs of Americans. We have done a number of things within FTA over the last 9 months to do that. We are putting in place an electronic grant-making process that will reduce the paperwork required by our grantees. We are also looking at many of the regulations that we have had over previous years to see what we can do to minimize the paperwork that is required on our grantees to comply with many of those regulations.

We hope by their efforts, and additional efforts that we hope to implement over the next year, that we will continue to minimize the mandates and minimize their impact on the cost of operations of our grantees.

Mr. Chairman, that concludes my testimony. I look forward to working with you and members of the Committee to make sure that transit meets the mobility needs of our citizens. I am once again excited about our budget submission, and once again indicate our commitment to your goal to continue to make sure that we rebuild the infrastructure of America and try to enhance all the financial resources that we provide so that our State and local partners can, in fact, in their efforts to meet their infrastructure needs as well, maximize the Federal support that we provide.

Thank you, Mr. Chairman, and members of the Committee. I stand ready to answer any questions that you may have in regards to my testimony.

Mr. BORSKI. Thank you very much, Mr. Linton.

First we will hear from Administrator Slater.

Mr. SLATER. Thank you, Mr. Chairman, Mr. Inhofe, and ladies and gentlemen of the committee.

I am pleased to testify at today's hearing on the transportation and environmental infrastructure needs of the Nation. I am also

pleased to appear with the Federal Transit Administrator, Gordon Linton. Both of us, as well as Secretary Peña, are committed to a truly intermodal effort as we carry out the Intermodal Surface Transportation Efficiency Act of 1991.

It is very timely for me to be here—as you noted, Mr. Chairman—for I have just completed a 3,500 mile, border-to-border, 14-day, 14–State, fact-finding trip to assess our surface transportation infrastructure needs, to evaluate the implementation of ISTEA as it relates to the responsibilities of the Federal Highway Administration, and to get a full understanding of the proposed National Highway System, which we recently submitted to the Congress for approval and which you have considered in recent hearings.

I would also like to note that during the course of my border-to-border mission from Buffalo, New York to Laredo, Texas—I traveled as much as possible off the Interstate Highway System and on those other important routes that have been designated for inclusion as a part of the National Highway System.

I would like to request permission, if I could, to submit my written statement for the record and I will be brief in just touching on some of the questions that were posed to us.

Mr. BORSKI. Without objection, your prepared statement will appear in the record.

Mr. SLATER. Thank you, Mr. Chairman.

As Mr. Linton has noted, the Los Angeles earthquake has served as an excellent opportunity for us to evaluate many of our actions and policies as it relates to transportation. During the course of my border-to-border tour, an event which occurred underscores the importance of the hearings here today. It was the opening of the Santa Monica Freeway in Los Angeles. It was opened only 84 days after the quake.

The quake and last year's midwest floods have demonstrated the effects of damage to important parts of our transportation infrastructure and have brought home to us the overall importance of our transportation system. We have always said that our transportation system is about more than concrete, asphalt, and steel, that it is about people and their ability to pursue happiness.

With the Los Angeles quake and with the midwest floods, we saw our system damaged to an extent that individuals in their private lives and business leaders could not go about their daily tasks so as to make life better. They could not, in effect, pursue happiness.

I believe that the public is aware, if not alarmed, at the current condition of our infrastructure. As many of you have stated through your specific examples, our roadways are crumbling. My road tour confirmed that reality and that understanding. To be sure, we are yet the most mobile society in the world, but for too long our infrastructure has been in a state of disrepair and there has been consistent disinvestment in that infrastructure to the extent that it should cause us concern and alarm.

These conditions were also very vividly outlined in the Washington Post supplement that I have before me. I would also submit that for the record as well, Mr. Chairman. I would think that most of you read that article. It was titled, "Infrastructure, Preparing for the 21st Century". This article highlights the concerns of many. In the article there are statements from the vice president, Secretary

Peña, the chairman of this committee, the chairman as well as ranking minority member of the Senate Environment and Public Works Committee, and other transportation leaders, economists, and transportation experts.

This Administration is committed to wise investment in our infrastructure facilities and the continued improvement in the quality and performance of our infrastructure programs. We believe that the investment must be focused and strategic. We are also of the belief that it will serve to enhance our quality of life if the investment is made wisely and that it will serve to strengthen our economy as well as make for a cleaner environment.

As Mr. Linton has noted, the President's proposal for the fiscal year 1995 budget calls for not only a significant increase in transit dollars, but it also calls for the full funding of ISTEA provisions dealing with the Federal-aid program. Mr. Chairman and members of the committee, that is essential if we are to hope to at least keep pace with the needs that exist. I might also note that even with the full funding of ISTEA we still have difficulty in maintaining our system in its current condition.

The President has stated, "A well-functioning infrastructure is vital to sustained economic growth, to the quality of life in our communities, and to the protection of our environment and natural resources." We have seen, again with the quake in Los Angeles and with the floods in the midwest, the truth in that statement as individuals there suffered because of the impact of those natural disasters on their transportation systems. But also because transportation moves good throughout our Nation, we living in other parts of the country also suffered because of those natural disasters.

Mr. Chairman, at this time I would like to just quickly touch on the questions that you and the members of the committee posed to me. Many of them were the same as those questions posed to Mr. Linton.

First of all, the question of an assessment of the Nation's current and future highway and bridge infrastructure needs, funding sources, and what priorities we have set for meeting those needs.

Let me also refer to the conditions report that was recently submitted to Congress. The report, as relates to highways and bridges, uses 1991 numbers. So they are a bit dated, but they still underscore the importance of the need for investment in transportation, especially as it relates to highways and bridges.

In that report, we note that there is a $212 billion price tag on the existing backlog of highway pavement deficiencies and the feasible capacity deficiencies that exist on our system currently. Also, we note in the report that there is a $78 billion backlog when it comes to those resources that are needed to eliminate the existing bridge deficiencies. You total those figures and you get $290 billion, the amount needed to address the backlogs that currently exist on our roadways and bridges.

I must also note that this backlog is likely to increase because Federal, State, and local governments are not, unfortunately, investing at a rate that is necessary to maintain the overall conditions and performance of our system as it currently exists. Also, because of the projected increases in the number of per capita vehicle

trips and the length of those trips, there will continue to be increased demands on our current system.

I saw this evidenced vividly along my trip travelling on US 9 in Louisiana where conditions are very poor. This is a roadway that is essential in the evacuation efforts in case you have a natural disaster, hurricane, or the like on the southern Louisiana coast. Also, I visited bridges which demonstrated signs of wear. Some demonstrated extensive states of disrepair. We have to address those issues.

Second, you asked about the adequacy of current funding levels to meet existing and future highway program needs. The capital investment by all levels for government for all highways in 1991 was $32 billion. The cost to maintain current conditions for the next 20 years would cost us about $52 billion. So you can see that we have a $20 billion shortfall there.

Also, the cost to improve current conditions and performance to eliminate the $290 billion backlog I noted earlier would require an annual investment of about $67 billion, $35 billion above the actual 1991 investment level. So we do have some very serious problems and concerns facing us.

Let me mention how the Federal Government can facilitate highway and bridge infrastructure improvements.

First of all, by making the case for the need to fully fund ISTEA and to fully implement the highway portion of ISTEA, meaning to fully implement the requirements of ISTEA. The Department of Transportation and the Federal Highway Administration are working very aggressively to do just that. Also, approval of the NHS.

The National Highway System, as you know, is but 4 percent of the almost 4 million miles of public roadways in the country, yet that 4 percent carries over 40 percent of the highway traffic in the country, over 75 percent of the truck freight traffic in the country, and over 80 percent of the tourist traffic in the country. If we pass the National Highway System, we will have a means for focusing on the most important roadways in the country. We believe that that will lead to strategic transportation investment.

Also, there are some other things that we are doing. We are trying to bring the private sector and the public sector closer together. There are two projects that are worthy of note in that regard. The project in southern California dealing with State Route 91, where we have a private firm building and operating a toll road on State-owned land—in Houston, during the weekend I signed an agreement that will allow the Texas Turnpike Authority; Harris County, Texas; and the Federal Highway Administration working with the State to commit Federal funds to build some 28 miles of toll roads and to also transfer a bridge to our program so that Federal funds can be used in payment there, thus relieving the State and the city of the burden of continuing to finance that bridge.

We believe that these kinds of innovative financing techniques can serve to stretch the Federal dollars that are available, allowing them to be leveraged so as to attract more dollars from the private sector.

As far as the role of State, local, and private sector resources in dealing with the need to revitalize our Nation's highways and bridges and the infrastructure, let me say that State and local gov-

ernments have an essential role to play. They furnish more than 50 percent of the funds for all capital highway and bridge improvements to date. It is especially important to note that in the 1980s State and local spending for highway capital improvements increased by 6.5 percent. This was more than inflation. And this was a time when investment at the Federal level was not keeping up with inflation. So States and locales have really gone a long way in participating in the need to invest more resources in infrastructure.

As far as steps that FHWA has taken to ensure that its capital assistance programs do not create reverse incentives, we have encouraged the States to spend a lot more of their resources on maintenance. There is the belief by some that many States will allow a particular roadway or bridge to deteriorate to such an extent where they can use Federal funds to rehabilitate or replace the structure. We have found no real evidence of that and we believe that the management systems that were required in ISTEA will help us to ensure that that is not the case.

We also believe that the metropolitan planning programs that must be prepared as well as the State-wide plans that must be prepared will alleviate that potential. So we don't think that the program will encourage States or locales to avoid the expenditure of their resources for maintenance so as to qualify for Federal rehabilitation or replacement dollars.

As far as the pros and cons to the European approach to building highway facilities, let me say that in many respects around the world we are good teachers and in some respects we are good students. In the case of the European approach, there is much there for us to learn. They have basically focused on major roadways and invested more dollars up front so as to provide a stronger pavement design. They have also engaged in more comprehensive maintenance. They have also dealt with early rehabilitation efforts before distress starts to show. We can learn a lot from their effort.

When it comes to safety, though, I have to say that they can learn a lot from us because our design standards have created, again, a system that makes us the most mobile society in the world. Also, it provides for the safest system for our citizens as they travel on our roadways.

Our system is also much larger because we have attempted to provide quality to those who live in both urban and rural areas. So in a special way, we sometimes have created a design that may not have the life cycle of the European system. But I do believe that with the NHS, the National Highway System which allows us to focus on those most important roadways, then we can start to target resources and attention in a strategic way so as to build at least those roadways that carry so much traffic and that are so important to the overall health and well-being of our Nation, that we can build those roadways to greater standards.

As far as the importance of highway and bridge infrastructure to the Nation's urban areas, let me say that I believe that the Federal Highway Administration, working with the States and working with our partners in the different modes within the Department of Transportation at the Federal level, can do more to strengthen and

enhance the transportation infrastructure in our Nation's urban areas.

If we would but again focus on the earthquake in Los Angeles, the disruption and the destruction to the interstates denied individuals the opportunity to come into the urban areas of the Los Angeles metropolitan area and enjoy that which is good about those areas. In many instances job opportunities and in others the opportunity to partake of the culture and aesthetics of the area.

When we look at our urban areas today, we see that because of the deficiency of the transportation system many companies are moving outside of the urban areas. Because of this transportation and business philosophy dealing with just-in-time inventory and distribution, many companies are deciding that the congestion of the urban areas is just too great for them and too costly for them to leave their business sites within urban areas and thus have to incur the added costs of moving those goods to markets around the country and around the world, having to go through congestion.

We know that congestion costs. We also note that many cities cannot take full advantage of the tourism value of the infrastructure and the opportunities that exist within the city limits because of their transportation systems. We also know that many businesses are moving to what is called suburban communities and collar communities and that job opportunities exist there for individuals who live in the inner city, but because of transportation system deficiencies, those individuals cannot get to those opportunities.

So I sit here with Mr. Linton. I stand with all the members of the United States Department of Transportation—that includes Mr. Linton—we stand with a Secretary who is about making things happen and voice a commitment to focusing on the needs of transportation enhancement in the urban areas.

Also, I would like to note that even as we speak of the National Highway System, there is a place on the National Highway System for addressing the needs of urban areas. You might recall, Mr. Chairman and members of the committee, that when we unveiled the National Highway System, we did it in the heart of our Nation's capital. We did it at Union Station, a major intermodal facility. We did it there because Louisiana Avenue, which is on the NHS, leads to Union Station. We did it because we could then underscore the importance of Constitution Avenue, Pennsylvania Avenue, major arteries throughout this great city that are a part of the National Highway System.

Then finally, Mr. Chairman and members of the committee, when it comes to intergovernmental partnership that was underscored in the Executive Order of the President signed last year and the relationship between the programs of the Federal Highway Administration and the States, we have always worked in consultation and coordination with the States. We have a very special kind of grants program with the States that does not put undue Federal mandates on the States without providing a greater benefit to the States.

As you know, under the Federal-aid program, we pay between 80 percent and 90 percent of the cost of improvements on the Federal-aid Highway System. So while there may be some requirements

when it comes to environmental considerations, when it comes to meeting particular aspects of our program, when it comes to various labor considerations by virtue of the Davis/Bacon Act, the benefit more than outweighs the hurdles that the States must go through to access those resources.

Finally, Mr. Chairman, we appreciate this opportunity to talk about the importance of transportation. We hope that as we respond to the various questions you will forward that we will speak with the kind of enthusiasm and vision to underscore our belief that transportation is about more than concrete, asphalt, and steel, but it is about people and their ability to pursue happiness.

Mr. BORSKI. Thank you very much, Mr. Slater and Mr. Linton. We greatly appreciate your testimonies. They will go a long way to helping the subcommittee in its work.

I would be remiss if I also didn't congratulate each of you for the outstanding job you each, along with Secretary Pena, have provided for the people of California in response to the earthquake. It was an incredible accomplishment.

Let me start right where you ended up, Mr. Slater, about the unfunded mandate question.

We hear an awful lot about it. The mayor of Philadelphia has a loud voice complaining about unfunded mandates.

Can you repeat for us the amount of money that is given from the Federal Government to the States and localities for highway and transit projects?

Mr. SLATER. On the Federal-aid projects, it is between 80 percent of the cost that is involved in constructing or maintaining that facility. If it is on the interstate, then the cost is 95 percent. That is the benefit that these cities and States derive from the use of Federal funds.

There are some costs, as I noted. They must respond to NEPA requirements, Clean Air requirements, Davis-Bacon requirements, and some other regulations. But it is our belief that because of the special relationship we have had with the States and now with cities and MPOs that the benefits more than outweigh any mandates that might result from having to comply with certain regulations.

Mr. BORSKI. Mr. Linton, on page seven of your testimony you refer to $200 million in funds already transferred to transit use in fiscal year 1994. If you project the total for the full year, would it lead to an increase over the previous year?

Mr. LINTON. We believe it will. We think we can probably go somewhere near $500 million this year. We think it will be an increase over the previous year. And we think as the localities begin to understand better how funds are flexed, as the MPOs become more proficient in their operations, as the culture gets changed with all those who are now involved in planning and making decisions on flexing funds and which projects will be important in each corridor, we think those numbers will increase over the years.

Mr. SLATER. Mr. Chairman, since ISTEA was enacted, over $1 billion have been transferred from the highway account to transit. But I would also like to offer that I don't think we can just look at the dollar amount and make a judgment about how the flex pro-

visions of ISTEA are working because the flex can be operated both ways.

What we really will be the test and will give us a lot of insight into the process is the planning, the metropolitan process and the State-wide planning process, because it will bring the decisionmakers together and they will have to set priorities and they will have to make judgments.

Mr. LINTON. I totally concur.

Mr. BORSKI. It is my understanding that some States are doing very well in flexing and others are not. What, if anything, are you doing to encourage the use of flexible funding by the States who are not flexing as much, if you will?

Mr. LINTON. I think Mr. Slater's point was well taken that we can't always—and particularly over the years as this becomes more an integral part of the process of transportation decisionmaking—that we can necessarily measure whether or not they are doing good planning based upon how much money is being flexed from highway to transit. I think the real key will be whether or not as MPOs and those involved in the planning process begin to seriously look at what the needs are in their communities and decide which mode is best within that community. That will be the best assessment of whether or not the full funding flexibility and MPO planning process is really operating within the States and municipalities.

Mr. SLATER. Mr. Chairman, just one other comment in support of Gordon's points.

One thing that I did in travelling from border to border was to visit with a number of mayors and a number of MPOs, which is a little different from the approach usually taken by a Federal Highway Administrator because traditionally our relationship has been first and foremost with the States. But in those meetings there were representatives of the State DOTs. It really gave us an opportunity to listen to the leaders of the MPOs, the mayors, and the citizens talk about their transportation needs. We were then able to get a better sense from them as to how we must work together at our end to be responsive to those needs.

Also, I was pleased to discover that there are two mayors in cities I travelled to who are now Chairs of the MPO. One is the mayor of Memphis and the other is the Mayor of Corpus Christi. I believe that as mayors they will make a very unique contribution to the MPO process serving as Chairs.

Mr. BORSKI. Mr. Slater, there will be a report issued shortly indicating that 19 States spend none of their National Highway System funds in urbanized areas. With the growing problem of urban congestion that I cited earlier, do you think the lack of investment in urbanized areas is the right course to help solve our infrastructure problems?

Mr. SLATER. I am looking forward to getting the report because we want to see exactly where this condition exists, then visit with the State DOT heads to discuss why that is the case. Clearly, our urbanized areas are important to the overall health and well-being of the Nation. We must be more responsive to the transportation needs of those who reside there, not just for their benefit but for the benefit of the Nation as a whole.

Also, those who happen to live in collar communities or suburban communities, they enjoy the benefits of urbanized areas. Urbanized areas and their residents enjoy the benefits of economic activity in suburban areas. So clearly there must be a balancing of the transportation concerns that will help each and every area of our society fully play its role in carrying its weight, in moving our Nation forward economically, socially, and environmentally. I don't think it is acceptable when you don't have proper investment in urbanized areas.

I would have to say that that would be the case as it relates to rural areas as well.

Mr. BORSKI. Mr. Slater, a key feature of ISTEA, designed to maximize the impact of our highway dollars, is the planning process. Our hearings last fall on the planning and flexible funding provisions of ISTEA showed that some States were not complying with the spirit of the new planning requirements, which were designed to enhance the development of a National Intermodal Surface Transportation System.

What is the status of implementing the ISTEA-mandated planning process and will FHWA be conducting careful reviews of the State transportation plans to ensure that they promote the National Intermodal Surface Transportation System envisioned by ISTEA?

Mr. SLATER. The answer to the second question is yes. We will be very forthright and aggressive in ensuring that the planning process is fully implemented. Second, we are on course as it relates to the planning process. Mr. Linton and I have signed documents putting the process into effect. That has been communicated to all the States and they are now in the process of implementing that particular provision.

Mr. LINTON. Let me just add—and it is important to note that both the certification and the approval of the State transportation plans are a joint process between the FHWA and the FTA. So we both, as partners, participate in that process.

We are working to continue to provide technical assistance to MPOs, trying to make sure that we use better modeling techniques. We are hoping that as well when we put in a number of provisions to make sure that there is community participation. We think that as you get more community involvement in the planning process, you have additional forces to bear on what decisions are made. We think many of those processes are being put in place and further implemented than they were last year at this time. Therefore, we expect to have better improvements in the projects that come forth.

Mr. BORSKI. I yield now to the gentleman from California, Mr. Baker.

Mr. BAKER. Thank you very much.

I had the pleasure of meeting Mr. Linton in Los Angeles as we toured the earthquake damage and the beautiful job of repairing they did. We were shocked at the hearings to learn that they were actually going to open about 70 days early. So Mr. Linton is going to talk to Mr. Slater about how we do that more often. [Laughter.]

I appreciate getting to know you and your emphasis on mass transit.

To Mr. Slater, one thing we learned in Los Angeles was that those freeways that were reinforced or repaired stayed up, and those that hadn't been retrofitted came down. In the third panel today, Mr. Tony Chargin is going to present from the laboratory ways that we can x-ray and use the defense technology of the Livermore Lab to tell regardless of how it looks on the outside what is on the inside. In that way, we can pinpoint our dollars spent to those that are most dangerous. Had we retrofitted the ones that came down—had we known where the epicenter was going to be, we could have saved a few lives and perhaps gotten ahead of the game.

That is impossible to do unless you use technology, so I hope you will have some staff members review with the Livermore Lab the techniques they are using. Chairman Mineta went down and visited with them not only about this but also smart highways. So as we get ahead of the curve in Los Angeles, we have to realize that we can't retrofit all of the 1,700 bridges that are down there at once. We need to find a way to do the worst ones first.

I am encouraged at the work that was done in Los Angeles and want to thank Mr. Linton for coming and reviewing the progress that was made in that area.

Thank you for your testimony today.

Mr. BORSKI. The gentlewoman from Michigan.

Ms. COLLINS. Thank you very much, Mr. Chairman.

I will give my first question to you, Mr. Slater. I apologize for not catching up with you when you were in Detroit. You were on a very fast track and I was always two steps behind you when you were there last month.

Would you please explain to me step-by-step exactly how DOT goes about approving a State transportation plan, as mandated in ISTEA? Include in that whether issues such as urban funding equity or border community special needs are taken into account during this process.

Mr. SLATER. First of all, let me say at the outset that we don't just rubber stamp the metropolitan plans. I think that is important for the record. The MPO, which is the policy board in your metropolitan areas, must adopt a transportation plan that is financially constrained and that conforms to the State-wide plan. FHWA and FTA must perform a conformative determination as to whether those plans in fact mesh.

Once that is determined—especially where you have non-attainment—then the process proceeds.

The Governor must also approve the metropolitan plan. The metropolitan TIPs, after they have been found to conform to the State-wide plan, and after they have been approved by the MPO and the Governor, are then included in the State-wide plan. It then becomes a part of the State-wide planning program.

So that is it in a nutshell. The important thing is that there is a step-by-step process. The objective is to get the two plans to mesh. You must have the approval of the MPO, involvement of the MPO, and ultimately the approval of the Governor.

We follow the process very closely. At any point, if there is the determination that there is not cooperation, then we can step in and facilitate that to a greater degree.

Ms. COLLINS. The reason I ask is because in Michigan there has been a lot of highway improvement, but it stops at Eight Mile Road when it gets to Detroit. You can see it in the horrid conditions that Detroit's freeways have.

I don't even know if you went on the exits or entrances. They are even worse. You are really taking your life in your own hands just trying to get on the freeway at certain points. So obviously it is a lack of concern by the State. The State has chosen to spend its dollars elsewhere.

My feeling is that perhaps money should be earmarked to urban areas when you see that a State is blinded to the urban realities in that fashion that money should be earmarked and should be stated that way to the State. Is there any way that you can put that into the process, that you could actually see what is being done to the urban freeways?

Mr. SLATER. First of all, I did view many of the freeways and the roadways in the Detroit area on my trip. I had Pat Nowack, who is the State DOT Secretary, with me. We did meet quite extensively with city officials to address many of the concerns you have raised. Secretary Nowack made a commitment to respond to those issues that were raised. I believe that he will. I know that he has been in contact with Mayor Archer and they have talked extensively.

Also, he announced during my visit the current year's construction program for the State of Michigan. It includes a considerable increase in dollars being spent in the Detroit area.

That aside, it is our belief that the planning process, which gives MPOs more say, will have a positive effect over the long-term. We have just completed the outline of that process. It is now being implemented. It was an effort that was strengthened by the 1991 ISTEA legislation. We think it will have a positive impact on giving metropolitan planning areas and organizations a stronger say in how transportation dollars are spent.

Ms. COLLINS. I don't know if you remember that during my opening statement I said that the Nation's first freeway was in Detroit.

Mr. SLATER. Yes, ma'am.

Ms. COLLINS. I don't know if you had an opportunity to travel Davidson Highway. It is a very short freeway, but it was built, I believe, in the late 1940s or early 1950s. That freeway is still in existence today with no major repair. The reason that highway is still there, while all the new highways have been repaved dozens of times, is because of a method they used to pour the concrete that is very costly now—it may not have been then—but when they laid that roadway they cured it for about 7 days or longer with water every day, which hardened that concrete to the point that there are no potholes. After over 40 years, that freeway is almost as good as it was when it was first laid down.

On the other hand, we built a new freeway and within 2 years it had to be rebuilt.

I know that we are being penny wise and pound foolish. It would be worthwhile to put more money into building a freeway that would last longer than to rush them. On 696, they paid the contractor extra money to finish the rebuilding of the freeway quicker.

They did a real quick job and within the next year they had to come in and fix it up. So we are wasting taxpayer dollars.

Is there anything we can do about setting standards about the way the highways are constructed?

Mr. SLATER. We are in the process now of doing just that, looking at how we take advantage of what we have learned from the Europeans and also what we have known to do in the past. You mentioned Michigan. Michigan has been a first in a number of respects—the first mile of rural pavement laid. I guess that was in 1909. Also the European pavement testing effort is now underway in Michigan so we hope to learn a lot from that.

But we clearly understand and appreciate the concerns you have raised. We are going to make the necessary changes so as to give our citizens the kind of system that is necessary to sustain us economically in the 21st century. As I say that, let me also offer this: that because of the approaches we have taken in the past, we have in a relatively short period of time made our society the most mobile in the world. That has enhanced our economic prowess. That has made us militarily more secure and stronger as a Nation.

So while there are things to learn, there are ways we can enhance our system, it is still for the most part a very, very good system. But clearly, if we were not stretching to improve, if we were not continuing to study, listen, and learn, then we would not be true to the spirit of this Nation to remain forever young, forever wise, and forever strong.

Your points are well taken. We are moving on those issues right now as we speak.

Ms. COLLINS. I thank you very much for that response.

I would like to also make note. Will you notice the move to the suburbs and the collar communities that encircle the urban cities? The fact of the matter is that when our factories and our businesses moved to the suburbs, they also take their tax base with them, which really hampers the urban cities in meeting our matching funds because we don't have the income any longer to match the great need we have, such as for light rail, which is a big ticket item. It seems to me that we should insist that the State step in and pledge to meet some of those matching funds—or the great majority of those matching funds—that the Federal law mandates.

Do you agree?

Mr. SLATER. Well, that is a good point. In most instances, the State will meet the match. The problem is that many metropolitan areas have greater needs than the State can address with the limited funds the State has and the obligation to respond to the needs of the entire State.

As I noted during my remarks earlier, cities and States really are to be commended for the efforts they took in the 1980s to make up much of the difference that was not forthcoming from the Federal level as they raised resources about 6.5 percent above inflation where at the Federal level that was not the case.

I know in Arkansas we had two major transportation bills to pass, one in 1985 and one in 1991. It was the same around the country. So States and locales are to be commended.

Also I think the innovative financing proposals that we will be coming forth with in the near future may give us some insight as

to how we can stretch the Federal dollars and how we can possibly allow the private sector to meet some of those match requirements that you have referred to.

It is something that we are mindful of. It is something that we are committed to address.

Ms. COLLINS. We looked into that private funding for matching and what I would like DOT to do is to think about going into an urban community—and some rural communities have the same problem—and looking at their books, when you see that they really do not have the source of financing for their matches, that there could be grants or forgiveness of their matching share because you can't get blood out of a turnip. If they don't have the money but they still have the need, I think that is one of the marks of a great civilization, the state of our roads.

It sends the wrong message when we have good roads outside the city and crumbling infrastructure inside.

Mr. SLATER. Congresswoman Collins, let me assure you that this Department led by a former mayor, and this Department made up of many individuals who served at the State and local level, will be responsive to the concerns you have raised. Also, I believe that our President has challenged all of us to work together to rebuild America. That includes our Nation's great cities as well.

Ms. COLLINS. Thank you.

Mr. Chairman, I have one more question for Mr. Linton.

Mr. Linton, my major concern deals with light rail. As you noted, our freeways are more congested with cars, which are becoming increasingly more expensive to purchase and maintain. Many of my constituents have lost their ability to get to work, severely limiting their ability to hold down a job.

We have two major companies—Ameritech and Blue Cross—who moved to the suburbs a large part of their facilities, but not far away from Detroit. It is within 15 to 20 minutes by car. But those people who didn't have cars gave up their jobs, even though they tried car pooling and vanning and they were able to hold onto their jobs for almost a year—I think the average termination was about 9 months—they simply could not. If they had a sick child at home, they couldn't get back to the day care center to get their child.

I feel that we need mass transportation. With the pollution problem, we cannot rely on buses and fossil fuels, which is a finite source. We need to go to light rail.

The trains opened up the whole country for expansion. I think we need to go back to heavy rail for surface transportation to give people a choice between the air and the car and the train.

Do you support the concept of light rail for Detroit?

Mr. LINTON. Let me just say that we think light rail is a useful mode of transportation. I will be real clear and honest with you that we have pretty much provided the opportunity for local communities to decide on which particular they use as far as light rail versus buses. They go through an alternatives analysis where they begin to look at and examine—both in terms of the cost-benefit analysis, the improvement in mobility—they begin to look at all those issues in determining which one of the modes they think would be the best fit for their community.

Also the ability to fund the project that they seek to put in place is a large consideration. We have more and more cities across the country going to light rail. The Federal Government has stepped up to the plate in a major way in supporting a number of those projects.

I just recently spoke in North Carolina to another group that is looking at light rail as well. I said to them that light rail in all cities is not a panacea. It must be something that the cities are willing to support, be financially able to support, and question whether or not with the demands being put on the Federal Government and our desire to reduce our deficit, whether or not we will be able to fund every light rail project that every one in this country now desires to have.

But also I think, as you stated earlier, and what we are trying to press in our livable communities initiative, that it is important that mayors and cities and others begin to look at the economic development proposals and projects and look at what kind of transportation is going to be necessary to get the employees to the places of employment.

My concern over previous years—I don't think the kind of integration of the planning offices in various cities, the economic development offices in cities, or in States, have made sure that they integrated transportation in all its modes in their transportation planning. We are hoping through the MPO process that they will begin to do that.

With community involvement and citizen participation hopefully we will change some of the players who are at the MPOs so that there is a better mix of those who sit on the MPOs so that the planning that is necessary to really make sure that you don't build an industrial plant outside a city where most of your employees are unless you think about how you're going to connect those to the opportunities—that has to take place.

We don't think we have done a great job of doing that in this country in years past. We are trying to put forth initiatives that will move us closer to doing that. Light rail may be an option. Dedicated busways are also an option. There are various ways of doing that. I think we need to look at the best way within the resources available.

Ms. COLLINS. Detroit is late to the game because we have a member of the delegation on Appropriations who was very hostile to light rail or subways and thought that buses were the only way to go. So this colleague of mine put into the appropriations bill every year for at least 7 to 9 years that none of this transportation money can go toward developing rapid transportation for the city of Detroit.

How he was able to constitutionally do that, I don't know. He doesn't do it anymore, but the thing is that we are late to the game because we were artificially kept from participating in the game.

Yes, buses are cheaper. Subways are even more expensive. But light rail, it seems to me, would be a reasonable compromise because buses are so finite that you must keep replacing the capital investment with buses. In this budget, the President does not put in the money for the bus drivers to operate the buses. So we could get all these new buses, but no help in running the buses.

Mr. LINTON. But at the same time you are talking about investing in light rail. If we don't have capital investments, which we focused on in this budget, there is no money available to put those kinds of investment in light rail.

As I said, we think light rail can be very, very useful in a number of cities. But we also think that you have to make sure that you don't make that kind of investment in a fixed route—which you do in light rail—and then go with a bad economic development policy that moves both people, housing, as well as employment places away from where you put the investment. If that kind of investment is going to be done, it must be integrated with how the city is being developed.

I am looking forward to meeting your new mayor. I think some of my staff have talked with both him and others from the city about some new things they are looking to do. I am sure this issue will be one that he will want to discuss as well. I am looking forward to going to Detroit to have some further discussions about these issues.

Ms. COLLINS. I hope I can participate, too.

I agree with you. The planning has been bad.

One last comment is that we have no authority over the manufacturers going outside of the city. If anything, we have been too generous in that we have laid the sewer work for them to go out so that we helped them to abandon the city, and then the State with the highway helped them abandon the city. I sat on a city council for 9 years and we tried everything we could. Even when we gave them the tax incentives, they would still leave the city, and sometimes pay us because they cancelled the contract and sometimes not.

We just don't have any authority over these manufacturers.

Mr. LINTON. Madam Congresswoman, let me just say that as my colleague Rodney Slater has said, many of us in the Department of Transportation came from local government. I served in the State House of Pennsylvania for 11 years. I recognize what we have done in terms of our failures. We provided tax incentives to in fact induce people to leave our city in the interest of economic development. We have done that over and over again throughout this country.

We have built parking lots, suburban malls, all in efforts to support economic development in one area, but at the same time you have moved people as a result of that from the urban centers. I am saying that when you make those decisions, they must be balanced decisions. Everyone involved needs to know what the ramifications are for other elements of the community and begin to consider that in their planning.

We are hoping that we are forcing everybody to the table now through our joint planning regulations and through the MPO process so that at the very least they begin to understand the ramifications for every decision they make and that you need to make sure that transit and transportation—whether it be the highways, rail, commuter rail, or whatever—must be integrated in that plan.

So when you give those tax incentives, you need to also understand that what you're doing—for instance, if you invest in a light rail facility on the one hand, and on the other hand you give a tax

incentive to move employment away from that light rail facility, and then you complain about the reduction in ridership and you are blaming the victim of bad public policy and bad planning. We must correct that.

Mr. BORSKI. The time of the gentlewoman has expired.

Mr. Slater, in December 1993 the EPA proposed a rule that would require the use of ethanol fuels. It appears that the anticipated increase of use in ethanol fuels could result in a $475 million loss to the Highway Trust Fund.

What is the Department of Transportation's position on that proposal?

Mr. SLATER. First of all, we are sensitive to the requirement so as to benefit the environment. Always you have to make transportation decisions that enhance the environment. But when it comes to the impact that this particular provision could have on the trust fund, it is significant. We have voiced the concern to EPA and we are now working to change the exemption so that the funds can continue to go to the Trust Fund.

As I stated earlier, even with the full funding of ISTEA, we cannot meet the transportation demands so as to maintain the system in its current condition. To improve it would cost even more. At a time when we are trying to dye diesel fuel so as to follow the resources on that; at a time we are working with IRS to try to turn off the valve, if you will, that allows individuals to evade various taxes on fuels; and at a time we are engaging in innovative financing it is difficult to not address this concern in the way we are.

So we are visiting with EPA and we are seeking to have the exemption removed.

[Subsequent to the hearing, the following letter and press release was received:]

U.S. Department of Transportation

News:

Office of the Assistant Secretary for Public Affairs
Washington, D.C. 20590

FOR IMMEDIATE RELEASE
Tuesday, April 26, 1994

Contact: Steven Akey
Karen Whitney
Tele: (202) 366-0660

Statement of
Administrator Rodney E. Slater
Federal Highway Administration

In response to a question regarding the ethanol fuel tax exemption at the House Public Works and Transportation Subcommittee on Investigations and Oversight hearing on April 21, I said I was concerned about the potential loss of revenue to the Highway Trust Fund and, further, that we are seeking to have the exemption removed.

My response was incorrect. I regret any misunderstanding I may have caused.

The Federal Highway Administration is not seeking a repeal of the exemption.

I support the Administration air quality initiative which, under the proposed EPA rule, would provide an added incentive to use a renewable resource -- ethanol -- in this effort.

I support the use of alternate fuels as one approach to improving our nation's air quality.

As Federal Highway Administrator, I remain concerned about the Highway Trust Fund revenues. The Fund is vital to maintaining our nation's road and bridges which, in turn, are critical not only to our economy, but also to the daily lives of all Americans.

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US Department
of Transportation

Federal Highway
Administration

Office of the Administrator

400 Seventh St., S.W.
Washington, D.C. 20590

July 5, 1994

The Honorable Jerry F. Costello
House of Representatives
Washington, D.C. 20515

Dear Mr. Costello:

I have been asked to respond to your letter to the President, cosigned by your colleagues, concerning my answer to a question from Chairman Borski at the April 21 hearing before the House Public Works and Transportation Subcommittee on Investigations and Oversight. In my answer, I stated that I was concerned about the potential loss of revenue to the Highway Trust Fund that is projected to result from the proposed Environmental Protection Agency's rule requiring the use of ethanol in nonattainment areas. Further, I stated that the Federal Highway Administration (FHWA) was seeking to have the fuel tax exemption for ethanol removed. My response on the ethanol exemption was incorrect. The FHWA is not seeking its repeal, and I regret any misunderstanding that may have been caused.

I have always and continue to support the use of alternative fuels as a way to resolve some of the Nation's air quality, energy conservation, and balance of payment problems. There is no doubt in my mind that the future of transportation in the Nation will depend heavily on alternative fuels. The Department of Transportation's concern is that this be done in a way that allows us to maintain our Nation's roads and bridges, which are so vital to our economy and to the daily lives of all Americans.

Identical letters have been sent to the cosigners of your letter.

Sincerely yours,

Rodney E. Slater
Administrator

Mr. BORSKI. FTA and FHWA spend less than 2 percent of their budgets on research and development whereas successful corporations generally spend as much as 5 percent or more. Do you think your agencies could effectively spend a larger portion of your budgets on R&D?

Mr. SLATER. First of all, I think we have to. I know that the Secretary is committed to it. Also, as reflected in the 1995 proposed budget, we have a significant increase for IVHS technology. We have requested an increase of $75 million, which would bring the total to about $290 million. That is significant.

Also, the Secretary is working with other Federal agencies and departments so as to ensure that more transportation resource dollars being expended throughout the Federal Government are targeted, that we require accountability, and that we are able to show results to the American people. That effort is going very well and we are trying to make effective use of dual use technology. So we are taking advantage of all the hard work that has been done over the years by the Department of Defense.

But your point is well taken. I can say that as it relates to highways, if we do not take advantage of the technology that is available, and if we do not continue to even advance that technology, that our highways could become a transportation system mode for centuries past rather than for carrying the load that they must carry in the 21st century. We are very much committed to this issue of research and development and technology implementation.

Mr. LINTON. Our budget for this year is pretty much consistent with last year's budget in terms of that particular area. One of the things we have tried to do is maximize research dollars, and not just available within the Department but also in the ARPA project. You will know that we are using a lot of defense conversion technology in utilizing funds that are available through ARPA. We have a number of transit-related projects that FTA will now be in the process of monitoring where the funding came from the OBRA funds that were available. But we plan to use many of those opportunities as well to supplement our research dollars.

The other thing I have done is to take on strategic planning within our agencies in trying to make sure that we maximize those dollars that are available. It is my belief that we have to make sure that our research is targeted. We have to make sure that research is targeted toward products that can improve mobility, that can increase the utilization of transit.

I have questioned, to some degree, some of the research dollars we have used in the past and how they have been used. I think we are strategically using our dollars better to make sure that we maximize some of the issues we are putting forth in our strategic plan. We want to make sure that we use those research dollars strategically.

For instance, we want to emphasize safety and security, which is part of our strategic plan. So we are trying to make sure that our research dollars focus on those areas. We also want to make sure that we have better connections with our intermodal partners and try to make sure that we make it easy for people to use transit. So using smart car technology, global positioning systems that

will allow us better fleet management—those are areas that we will be emphasizing in our research as well.

Mr. SLATER. Mr. Chairman, if I may add a bit more to my earlier comments——

Mr. BORSKI. I am afraid, Mr. Slater, that I am just out of time at the moment.

Unfortunately, we have a whole host of questions I would like to ask. There is a vote on the Floor right now that we must go to and we have a busy afternoon schedule. I am going to ask to submit those questions to you for a written response and then not detain you any further.

Mr. SLATER. That will be fine.

Mr. BORSKI. We greatly appreciate your cooperation in working out your schedules to both appear at the same time. It has been very, very helpful. We look forward to your responses.

Mr. SLATER. Mr. Chairman, there is one thing.

You had shared that there might be a study coming out soon that said that 19 States have not used the flex provisions. We have a list of the States that have, and our list totals 40. Because this is a very important issue, I would like to just submit this for the record and then we will compare that with the study that will come forth soon.

Mr. BORSKI. The question was on NHS money in urban areas, not overall flex funding, but I would appreciate that study as well.

Once again, let me thank you very much for your testimony. It has been very, very helpful to the subcommittee. We look forward to continuing to work with you.

The subcommittee will stand in a brief recess for a vote on the Floor and return as soon as possible.

[Recess.]

Mr. BORSKI. I would like to call our second panel. We have Mr. Richard Voith, Board Member, Southeastern Pennsylvania Transportation Authority, representing American Public Transit Association; Mr. J. Douglas Hartley, Executive Director, West Virginia Public Transit Association; and Mr. David Raphael, Executive Director, Community Transportation Association of America.

[Witnesses sworn.]

Mr. BORSKI. We gave our Administrators great leeway in their testimony. The rest of the afternoon promises to be busy on the Floor as well as here. So we would remind each of our panelists that your full testimony will be made a part of the record and we would ask you to respond and give as brief opening remarks as you can so that we can get into our questions.

With that, Mr. Voith.

TESTIMONY OF RICHARD VOITH, BOARD MEMBER, SOUTHEASTERN PENNSYLVANIA TRANSPORTATION AUTHORITY, ON BEHALF OF AMERICAN PUBLIC TRANSIT ASSOCIATION; AND J. DOUGLAS HARTLEY, EXECUTIVE DIRECTOR, WEST VIRGINIA PUBLIC TRANSIT ASSOCIATION, ON BEHALF OF COMMUNITY TRANSPORTATION ASSOCIATION OF AMERICA ACCOMPANIED BY DAVID RAPHAEL, EXECUTIVE DIRECTOR, COMMUNITY TRANSPORTATION ASSOCIATION OF AMERICA

Mr. VOITH. Thank you, and good morning, Mr. Chairman and members of the subcommittee.

I want to thank you for providing the American Public Transit Association this chance to testify on public transit infrastructure needs. Public transit is an important element of both the Nation's transportation and environmental infrastructure.

I am Richard Voith and I serve on the board of directors of the Southeastern Pennsylvania Transportation Authority, the Philadelphia area's public transit agency, and professionally I am the economic advisor at the Federal Reserve Bank in Philadelphia where I focus on urban and regional issues, mostly in the areas of transportation and the economic relationships of cities and suburbs.

I have submitted written testimony and a copy of public transportation funding needs. This survey contains the most up-to-date comprehensive information on transit funding needs available.

I will try to summarize the key points from my written statement as well as make a couple of points not in that document. I will attempt to address how a current investment stacks up against needs and what is included in those needs and the consequences of our success and failure in meeting those needs. I also want to talk a bit about the Administration's budget proposal and actions Congress might consider including the establishment of a National Transportation System and how Federal mandates have affected transit operation.

The transit industry needs $38 billion per year, $15.3 billion for capital infrastructure investments and $22.7 billion to operate transit systems, to effectively meet the goals Congress has set forth in ISTEA, the Clean Air Act, ADA, and other legislation. Capital investments, including maintenance and rehabilitation of existing rail transit systems, construction of new fixed guideway projects, replacement and expansion of rolling stock, buses, vans, and rail cars, and the upgrade of maintenance facilities and other capital items needed to provide public transportation services to the public.

Presently, the transportation industry is capital starved. Virtually all the resources of older transit systems are devoted to basic investments in maintaining the safety of the system or meeting mandated programs. Only a small fraction of our investment is devoted to items that improve the competitive position of public transportation in the transit marketplace.

We need to get beyond simply patching aging infrastructure to a point where we are making transit good enough to be chosen by more and more consumers. Only then will transit begin to reach its potential for reducing congestion and improving air quality.

Of course, the value of capital investments in transit can only be realized if there is sufficient funding for operating needs. Operating

expenses—which include salaries, maintenance, fuel, parts, planning, management, and so forth—with required new mandates such as labor-intensive transit service, existing operating resources are being spread increasingly thin.

Unfortunately, in the transit industry, attempts to spread scarce operating funds too widely ultimately lower service quality and causes ridership to fall. The surprising fact is that as transit budgets become increasingly constrained, the subsidy cost per transit rider is likely to rise, not fall.

I would like to give a Philadelphia example. In Philadelphia, we have two railroads bringing suburban residents to downtown. They both serve the same downtown market. They both serve similar suburban markets. But their similarity ends there. PATCO carries 35,000 people per day on 14 miles of railroad while the SEPTA carries 90,000 on 220 miles of railroad. PATCO achieves its high ridership by using infrastructure intensely. Trains run every 10 minutes while SEPTA's run every hour off-peak. Because of the high ridership, PATCO's subsidy per rider is one-fifth that of SEPTA's commuter rail system.

Why would SEPTA choose to operate trains infrequently if the cost per rider is so much higher? Because the total subsidy requirements are lower, a critical factor for SEPTA given the many demands on its resources. But from an investment perspective, the additional operating dollars that allow frequent service have a very high pay-off in terms of the number of people using transit. Subsidy constraints prevent SEPTA from moving to a much more productive high-ridership type of service.

Current Federal, State, and local fare box and other resources are about $22.6 billion. That is about $15.4 billion short of the $38 billion annual funding need. Unless our society bridges this gap, the transit industry will be unable to do the many jobs Congress has asked it to do.

With inadequate investments, transit systems will struggle to meet the demands of those who intend to defend it and those who have transportation choices will choose their cars, adding to the gridlock on streets and highways as well as undermining the basic fabric of older urban communities.

Public transit investments will benefit our society in many ways. They will improve and protect the quality of life and strengthen the economic base of city and rural communities. A 1991 study found that full rehabilitation of SEPTA would return $9 to the Philadelphia regional economy for every $1 spent. Compared to a scenario of continuing decline in support for SEPTA this pay-off means thousands of additional jobs and billions of dollars in additional personal income and business activity for our region.

In 1981, highways received $1.90 in Federal funds for every Federal transit dollar. Today, highways receive about $4.36 in Federal funds for ever Federal transit dollar. Despite the welcome reforms of ISTEA, the playing field is still tilted against transit.

We are disappointed that the Administration's proposed fiscal year 1995 budget falls short of full funding of ISTEA, a critical step in increasing transit funding. Compared to the fiscal year 1994 funding level, it would cut transit operating assistance by $202 million or 25 percent. Section 3 new start funding would be cut by

$268 million, a 40 percent reduction. We oppose both of these reductions.

The operating assistance reductions concern us very much. It is proposed at a time when Federal mandates for alternative fuel buses, drug and alcohol testing, and ADA paratransit services are adding an estimated $976 million per year to the transit industry expenses. One of the most tragic results will be that different constituencies will fight over pieces of a too-small pie, transit systems will have to choose among paratransit services for people with disabilities, service along routes that serve senior citizens and the economically disadvantaged, and capital investments that can't be detailed without increasing costs and down time. Improvements in service to gain a larger share of the market will be out of the question.

The operating subsidy is particularly hard on urban areas. In Philadelphia, over 87 percent of the people using transit are in the city of Philadelphia. At this time, most United States central cities simply don't have the resources to make up for the loss. Cities already bear the brunt of the burden of poverty and other social problems in the United States and the cut in productive service that operates primarily in cities will further undermine the economies of central cities.

Cutting transit will also harm suburban areas as well as cities. Marginal services, which frequently are found in the suburbs, may be the first to be cut. But much more importantly, the negative impact of transit cuts in the cities will ultimately have adverse effects on suburban economies.

Research I have done at the Federal Reserve Bank in Philadelphia as well as work done by others strongly suggest that in the long-run city decline lowers the rate of suburban economic growth. Undermining of services as basic as transit will certainly hurt cities and will eventually hurt the surrounding suburbs and the Nation as a whole.

I urge Congress to take the following steps to provide transit with the resources to meet its capital infrastructure needs as well as to provide the operating resources necessary to get the most out of our transit investments.

First, require Federal, State, and local officials to develop a National Transportation System that includes metropolitan and rural transit systems, the National Highway System, rail corridors, and intermodal facilities that connect them. DOT should be required to work with State and local officials and MPOs to develop such a system. We would hope that there would be a deadline for a submission of such a proposal to Congress, as was the case with the National Highway System.

I would like to make sure that metropolitan areas receive a fair share of all Federal surface transportation programs. I would like to give MPOs control over all Federal transportation funds for their regions so that local planners can meet Federal mandates in the most appropriate ways.

We support full funding of all ISTEA authorized programs, including the transit capital and operating programs, and provide the transit industry with the resources to pay for the capital and operating costs of Federal mandates.

Mr. Chairman, these actions will enable the transit industry to serve the transit-dependent Americans and to compete more effectively for new riders. Our entire society will be better off as a result.

Thank you again for the chance to testify. I would be delighted to answer any questions you might have.

Mr. BORSKI. Thank you, sir. We will first hear from Mr. Hartley.

Mr. HARTLEY. Mr. Chairman and members of the committee, my name is J. Douglas Hartley. I am the executive director of the West Virginia Public Transit Association. Today I am testifying not only as a representative of the transit community in West Virginia, but as one of the hundreds of small urban and rural transportation providers throughout our Nation represented by the Community Transportation Association of America.

As a staff member of the Kanawha Valley Regional Transportation Authority, West Virginia's largest transit property that serves our State capital and is funded under section 9 of the FTA Act, I see daily the effects of the decisions and policies that are made in Washington, DC, by the Congress, the President, and the Federal Transit Administration. It is an honor for me and my State transit association that I represent to participate in that process today.

As I was preparing my testimony concerning the Nation's transit infrastructure, I looked back at the past 12 years and realized that rural and small urban transportation providers face more challenges today than ever. Just a few examples include the Americans with Disabilities Act; the Clean Air Act; FTA's new drug and alcohol testing regulations; ICC insurance requirements; aging vehicle fleets; increased demand for services; and perhaps most importantly, the Federal deficit.

The transit community is quite aware of the increased competition for Federal funding. It is a battle we have fought hard for the past 10 years. However, the toll has been great. In many of our communities, the transit infrastructure has suffered. Providers have had to make difficult decisions between infrastructure needs and levels of service. Unfortunately, we are faced with a catch 22. Do we spend our limited resources for new vehicles, new facilities, and reduce our level of service, or do we just try to maintain our current level of service and increase costs? Either way our constituents suffer.

Our Nation cheered 2 years ago when ISTEA was passed. This past year, the Federal funding level was a great start toward the revitalization of transit and our country's infrastructure needs. However, this year's proposed funding by the President robs Peter to pay Paul by cutting operating assistance to fund additional capital programs. If transit is to survive in smaller areas and rural areas, we must look at the effects that decisions and policies made in Washington, DC—not how they affect only our larger cities, but how they affect our rural and small cities as well.

Smaller transit systems depend on Federal funding for both operating and capital needs. We cannot negate the effects of cuts in Federal operating assistance by token increases in capital assistance. Nor can we afford to neglect our infrastructure needs any longer. We are faced with a dilemma. Where do we go? How do we

proceed? How can we fully fund transit and still cut the deficit? They are tough questions and they don't have easy answers. Whatever we do, we cannot maintain the status quo of the past 5 to 6 years of just covering what we can cover the year before.

I have submitted several proposals that we think will help us in meeting the goal of providing safe, efficient, and affordable transportation to our Nation's citizens. Our State Department of Transportation fully endorses these goals as does CTAA.

While funding mass transit levels at authorized levels in ISTEA would be the ultimate step forward in solving our infrastructure needs, a possible solution in helping us get started is flexibility in the small urban areas that are funded under section 9, population areas of under 200,000. The ability to allow small systems the option of using their limited allocations for either capital or operating expenditures would allow local decision makers to maximize their resources in the areas of greatest need.

The Federal Transit Act currently places a cap on the amount of section 9 formula funds that can be used for operating assistance purposes. By comparison, the section 18 formula program assistance has no such cap. The current cap on operating assistance has an unfair impact on public transit systems in urbanized areas with less than 200,000 in population because it fails to recognize the relative dependence of different sized transit agencies on Federal assistance.

For example, FTA's own published figures show that our Nation's largest systems—those serving metropolitan areas of $1 million or more—Federal operating assistance accounts for less than 5 percent of their total budget. By comparison, smaller transit systems are 5 times more dependent, and rural systems are 7 times more dependent. The proposal to lift the current cap on small urbanized areas would have minimal effect on Federal outlays because it receives only a small percentage of the total Federal operating assistance allocated to these size cities.

Another area that could provide relief to smaller systems and to all transit systems would be some modification of the current charter regulations. Current policies prohibit the use of FTA assistance to carry out even incidental charter services. Charter regulations are a perfect example of how a major city, large transit, urban system problem dictated policy without regard to how it would affect a smaller rural system. The charter regulations are in large part a result of large urban systems directly competing with private charter operators.

In that regard, the regulations have had a positive effect in protecting the private operators' interests. In West Virginia and elsewhere in rural America, the regulation has denied service to many church groups, school children, and other citizens. For example, in Charleston we have three vintage street cars that are constantly requested for charter for weddings, group outings, et cetera. But if a private operator in Virginia declares that they are a willing and able provider, they can knock us out of that business and say that we cannot serve our constituents. This has happened in the past with different systems in West Virginia and throughout the country.

Transit systems in West Virginia do not wish to compete with private operators. We do, however, wish to serve our communities and would like to be able to provide incidental charter service within 50 to 75 miles of our service areas, as long as it doesn't interfere with our regular transit service. We do not wish to provide any overnight service. By granting this relief, it would allow local agencies to better serve their communities, generate revenues that can be put back into their systems without harming private tour operators.

Another issue that is of concern to us is transporting passengers across State lines. In many small urban areas and rural areas today, the nearest health care facilities are located in other States. Many community hospitals and related service centers have closed in rural areas, making travel to regional facilities in adjoining States a necessity.

In West Virginia, several systems operate in this environment. For example, the Potomac Valley Transportation Authority, a section 18 property operating in Petersburg, West Virginia, must provide service to both Virginia and Maryland for their citizens to receive adequate medical services. Due to the Interstate Commerce Commission's requirement that a minimum of $5 million in liability insurance be covered, PVTA's insurance costs have increased by approximately $16,000 annually.

This regulation, which was borne under the Bus Regulatory Act of 1982, was clearly not intended to cover public mass transit organizations. The legislative intent and history of the act shows that Congress' concern was primarily for the safety of commercial buses. However, the ICC has extended the minimum insurance requirements to all public transit systems other than those operated by local governments. This includes two-thirds of the rural transit agencies receiving FTA funds through their respective State DOTs, even those these agencies are engaged in interstate commerce and have already met State and safety insurance requirements.

As a result, many smaller community agencies have been forced to suspend transporting passengers across the State line due to the inability to obtain additional insurance coverage or because of the excessive cost of such coverage. Therefore, we propose that the transportation providers funded under sections 9, 16, and 18 of the Federal Transit Act be exempt from this requirement.

Mr. Raphael will speak in a minute about the rural transit assistance program. Earlier, a question from the committee was raised about research and development concerning transit funds. In the ISTEA legislation, there was a program set up, the rural transportation assistance program, which was to be funded at 0.15 percent of the total funding. In the past years, it hasn't been funded at its full levels and we recommend that it is funded at its full levels because it is a good program and it does a lot for rural communities and small urban communities.

The last issue I would like to address is a repeal of section 18(i) intercity bus transportation. In 1991, the Federal Transit Act was amended to establish a new assistance for intercity bus service in rural areas. Prior to ISTEA, the intercity bus service was an eligible program under the section 18 program but funding was for those activities that were not mandated. Under new section 18(i)

language, States are required to set aside 15 percent of the available rural transit assistance funds exclusively for intercity bus activities unless the Governor of that State certifies that the intercity bus needs in the State are being adequately met.

Since its inception, only a small portion of the funds in 18(i) have been used by States. The majority of intercity bus funds remain idle and unused because of the lack of demand or complicated regulations, even though rural transit needs have gone significantly in the recent years.

Mr. BORSKI. The time of the gentleman has expired. You may take a few seconds to wrap up if you would like. Your prepared statement will appear in the record.

Mr. HARTLEY. Mr. Chairman, this concludes my testimony. We tried to come here today to go beyond just raising questions and presenting you with problems. We have tried to present some practical solutions. In fact, the specific recommendations, including my testimony, have been shared with each member of the West Virginia delegation, and also to the Surface Transportation Subcommittee, which is considering some amendments to ISTEA. We would like to have your support for these recommendations.

I will be happy to answer any questions you may have.

Mr. BORSKI. Thank you, sir.

Mr. Raphael.

Mr. RAPHAEL. Thank you, Mr. Chairman and members of the committee.

My name is David Raphael. I am the executive director of the Community Transportation Association of America.

CTAA is a non-profit national organization that represents both the people who operate local community transit services as well as the people who depend upon community transportation as their lifeline to jobs and basic services, such as health care. Our members include the managers and operators of small urban, rural, and specialized transit agencies throughout the country.

I was delighted that Mr. Hartley could join with us today. He and his association are members of CTAA, as are almost 800 public transit agencies and State transit associations across the country. I will try to comment briefly on the status of rural public transportation nationally.

We congratulate you and express our appreciation for the invitation to appear here today. We are particularly delighted to follow-up on testimony that we gave before this subcommittee almost 9 years ago, when this subcommittee had some very extensive and worthwhile hearings looking at rural mobility and rural transportation issues.

I would like to focus on the results of a study and survey that we have just completed of rural transit systems throughout the country. We did this for FTA under the rural transit assistance program. Appended to my statement is a special summary of the findings of that report, which I would hope could also be included in the record along with our comments.

We are delighted at the prospects and are very hopeful that the results of the data in the survey will be included in the GIS mapping program that the Department of Transportation is assembling as a part of the National Transportation System initiative.

My testimony today is designed to try to provide this committee with information, really an update on the status of transportation from those earlier 1985 hearings.

First, I would like to talk about the network that is there. The rural transit network has grown significantly since the section 18 program was established in 1978, including a 30 percent increase in just the last 5 years. Today there are approximately 1,400 rural transit agencies operating under FTA's section 18 program. This includes 1,200 direct recipients of Federal funds and about 200 subcontractors.

Collectively, the rural network operates in almost 1,900 counties serving a non-urbanized population of 56 million. While nearly 60 percent of the rural transit services is provided by local public agencies, another 40 percent is provided by private, non-profit organizations. The balance, about 3 percent, are made up of Indian tribes and private carriers.

The rural transit fleet is made up of nearly 13,000 smaller buses, vans, and other transit vehicles, providing more than 100 million trips annually. The number of vehicles in service today is roughly 25 percent greater than it was just 5 years ago. Over half of the vehicles in rural service today exceed their expected life cycle.

It is important to keep in mind that people who use and depend upon public transit services in rural areas have traditionally been those who have no alternatives and who, for the most part, are isolated and shut off from the rest of the community. They do not drive or own cars of their own. Our study confirms that the core ridership of rural public transportation is predominantly the transit-dependent.

As I mentioned earlier, the enactment of ISTEA represented a significant move toward greater equity and balance in Federal transit assistance through the increased percentage allocation to rural areas. However, even if the section 18 program was funded next year at its fully authorized level of $154 million, as proposed by the President's fiscal year 1995 budget proposal, rural areas would receive the equivalent of less than $2 in formula per capita assistance compared with more than $9 in our smaller urbanized areas and nearly $18 per capita in the larger cities.

Finally, Mr. Chairman, I would like to discuss the issue of the relative levels of public transit services that are being provided in rural America today.

This is one of those situations where the glass is both half-full and half-empty at the same time. For example, today over 34 million rural residents have access to some public transit service. Public transportation is available, at least to a limited extent, in more than 1,700 non-urbanized counties. That coverage represents a remarkable expansion in service in the 15 years since the section 18 program was established. It is particularly significant in view of the limited funding resources that rural operators have had to work with and the numerous obstacles they have had to overcome.

On the other hand, it remains true that more than a third of our Nation's rural counties today see no benefit whatsoever from public transportation in the section 18 program. Over 875 rural counties today remain completely unserved by public transportation, an area that includes nearly 27 million people, or roughly a third of

the Nation's rural population. Another 30 percent live in areas where the average level of service is less than 2 trips per capita, or less than 25 yearly trips per car-less household, which is one of the measures we have tried to use in the report.

By comparison, the equivalent transit service in urbanized areas is equal to 50 trips per resident, about 25 times this rural average, or 980 trips per car-less household, nearly 40 times more than the rural average. In West Virginia, the gap in public transit services is even more pronounced. Mr. Chairman, 26 of West Virginia's 44 rural counties—60 percent of the State—have no public transportation whatsoever. Service in four counties is equal to the national section 18 average of two trips per year while service in 12 other counties is below that average, and in only two counties is the amount of service above the national average.

In conclusion, Mr. Chairman, I think the point we need to make is from a public policy point of view. We can and should take pride in what has been accomplished in a relatively short period of time. But we should also be alarmed that such a large portion of our population today remains isolated and out of the economic and social mainstream because their individual mobility is limited and they lack access to affordable public transportation.

With that, Mr. Chairman, I would conclude my remarks. I think we need to be particularly concerned in view of the current debate about the questions of access to health care, for example, where so many rural Americans lack access to doctors and medical facilities and transportation remains as great a barrier to good health as the lack of medical insurance. There is a similar concern over the access to jobs and employment training. As we look at welfare reform, we must really deal with that question of access.

We thank you again for the opportunity to appear and would be delighted to answer any questions.

Mr. BORSKI. Thank you very much, Mr. Raphael. That was an outstanding statement.

Do you see R&D needs that are not being met?

Mr. RAPHAEL. There are so many. We suffer, we think, from the problem that the researchers have not been asking the right questions in terms of our sector of the transit world. It is tragic that until a few years ago when we published the first directory and survey of rural transportation nobody had the faintest idea of what was out there; how many operators; what areas were being served and what weren't.

Our crude measures that I talked about in my statement are simply that. We don't collect any section 15 data, for example, about public transportation in rural areas. That is a blessing on the one hand because of the burdens of reporting, but on the other hand, we don't have the data around which to make good policy decisions. So we think that the lack of research in asking and defining questions about this area is critical.

I would say that in the broader area the lack of research into the cost of not providing access to public transportation in this society is a very critical area that we have urged this Administration and FTA to do. What does it cost this society, for example, for the elderly and others to be shut off from mobility and lose access to their

homes and service within their communities. We would certainly applaud efforts to increase those efforts.

Mr. HARTLEY. I concur with his remarks. The RTAP program in rural areas provides an excellent tool to do a lot of that. We do it at the State level to help dictate the information, to gather information about what is available in West Virginia. We believe the fund should be fully funded.

Mr. VOITH. I am an economist, so I may focus on research in economics.

From a transit operator's point of view is that we have very little understanding of how dramatic changes in service quality—frequency and speed—how it affects our ridership. What we have is our level of transit services distributed as it always has been as opposed to what may be best to meet our consumers' demands.

Frankly, we just don't know. We haven't had the resources to devote to really do the kind of marketing research that most major corporations would be doing. I think that we sometimes make decisions based on history simply because we haven't had the resources to devote locally into research.

Mr. BORSKI. Of course, it is tough to try to imagine getting less money and trying to devote some of that to research and development. I suspect that is our problem.

Mr. VOITH. It is a real curious thing. The way it works is that the less resources you have the less you spend time figuring out what you should be doing. In fact, when we are under budget constraints, we end up cutting our most profitable routes first because those are the ones with the most service on them.

Mr. BORSKI. That's incredible.

Mr. Voith, Mr. Linton referred to studies on transit and air quality benefits and said that transit benefits and mobility, accessibility, and support for rational land use and urban development were not considered.

Are you aware of ongoing studies of transportation control measures that include these factors?

Mr. VOITH. Personally, I am not the person to ask for that.

Mr. BORSKI. FTA's testimony refers to almost $1 billion in additional capital funding transferred to transit under ISTEA's flexible funding provisions with $200 million of those funds transferred so far this year in 1994.

Do you expect a continuing increase of flexible spending?

Mr. VOITH. We would certainly hope to. SEPTA would love to receive more highway funds directed to transit. I think it would be wholly appropriate in our local area. I am not a good person to speak about the national perspective on that.

Mr. BORSKI. Then let's focus on SEPTA a minute.

Has SEPTA received any flexible funding yet?

Mr. VOITH. The flexible funding we have received is very limited. I don't know the exact dollars, but it is very small. We have not been successful in leveraging a great deal of highway dollars for transit. I think it is wholly appropriate in a large metropolitan such as ours where we do have a great deal of highway congestion and we do have great transit needs, and also transit that is very efficient with regard to the amount of money we must spend as a

public to get another person to ride transit. We can do that very effectively. That would be a wise use.

Mr. BORSKI. I know we are all looking for increased funding for transit. Some States are using the flexible program very well and others are not using it well at all. It is my understanding that Pennsylvania is not using it well at all.

Mr. VOITH. I think the number was 2 percent. I may be wrong. It is a very small number used by Pennsylvania.

Mr. BORSKI. Do you have any particular thoughts as to why Pennsylvania would be doing so poorly? Is it the makeup to the MPO?

Mr. VOITH. I think that when you look at Pennsylvania, it is a very large rural State. We have southeastern Pennsylvania, including Philadelphia and Pittsburgh and other metropolitan areas. I think our MPO in southeastern Pennsylvania—the transit industry is not represented and I don't think there is a great constituency or a great representation of transit needs in our MPO. I think that is a serious problem.

Mr. RAPHAEL. Let me just add that I think there is some concern also about the amount of that $1 billion estimate or the $200 million this year that is being used out of the State share in rural areas as opposed to the flexibility at the metropolitan level.

We think that the evolution and the changes that ISTEA brought about are probably taking place much slower at the State level for a number of reasons, one of those being that there is no MPO mechanism to help that planning process.

We heard the testimony today about ways of improving that and the importance of the MPOs in that planning process. I wanted to remind the committee that the way the ISTEA legislation was structured there is no comparable institution in rural areas. You have the same State highway or transportation department sitting as judge and jury on that process.

We appreciate what this committee has done in looking at how ISTEA has worked to this point, but we urge you to pay particular attention as to how that process might be improved, particularly as it works in the State-wide and non-metropolitan areas.

Mr. HARTLEY. If I might add, the MPO process in my area—the MPOs are very good to work with and cooperate and put forth our needs. But when it comes to the decision of flexible dollars, it sits in the highway office at the Department of Transportation in West Virginia. In most rural areas in America, highway is king. Building roads gets more votes than putting an extra bus on the road.

Mr. BORSKI. But the MPO does have more power than before and can——

Mr. HARTLEY. That is correct, but it still comes down to the fact that when the State submits its plan it is a State decision.

Mr. BORSKI. When Deputy Secretary Downey appeared before the subcommittee in an earlier hearing, he mentioned that the 1994 transit condition report will explore implications of an increasing market share for transit as a measure of transit needs.

What market share changes do you see for transit?

Mr. VOITH. As we know, the transit market share, measured globally, has been declining on a consistent basis. But there are truly markets for which transit can be in large metropolitan areas

extremely competitive with proper investments. We see that simply—we can look at similar sorts of areas served by two different systems, as I did in my testimony.

Number two, when we look at transit opportunities, we can't look at it in a static sense. People go where it is convenient for them to live. If over time we provide convenient public transportation it will become part of their decisionmaking process. If there is no opportunity there, we will never get the people doing that and people will simply begin buying their second and third cars.

So there is market potential there. We must identify the markets and put resources into markets where we have the best chance to succeed. There is a great potential in certain markets.

Mr. RAPHAEL. The question is really oriented in an urban context. In our situation, the challenges that we face are really not that. The competition is not with the private automobile. The market share is not the issue. It is really isolation versus congestion. In terms of national transportation policy, we need to raise that concern of isolation to a level at least equal to that of congestion.

Our concerns are people who really don't have alternatives. Our struggle has been to try to increase the transit resources, to better utilize and coordinate the combination of human service resources, for example, and public transit. Because of the limited public transit funding in rural areas, HHS funding and client transportation plays a very significant role. So the struggle for us is in terms of the time that our members spend in trying to integrate those client transportation resources with a very limited amount of FTA resources.

Market share is not a concept that is very high on our agenda.

Mr. HARTLEY. When we looked at opportunities, we serve our area adequately enough to meet the needs of the people who have no other choice. Our opportunity is the rider of choice, the commuter. In Charleston, West Virginia, it takes $1.50 to park all day. In Washington, DC, it is $15 to $16 at the hotel you stay at. So it takes 75 cents both ways to ride the bus, so you spend $1.50 to ride the bus in or $1.50 to park all day. So they choose their automobile.

To be able to get them out of the automobile, transit has to be there with new areas, new communities, and when new suburban areas start to develop. For example, we just established service to an area south of Charleston. That seems to be the hottest area growing in our region. The problem is that it costs a lot to operate that service. Right now, our return isn't very good. But if we cut that service, those people will choose other modes and we will never get them back.

So we need the operating assistance to plant the seeds so that the tree can grow down the road.

Mr. VOITH. One point related to Mr. Hartley's point is that when we think about market share for transit, we really must think about in terms of reinforcing the markets in which we can be highly competitive. When we undertake policies that undermine the urban core of the downtown, that is going to undermine our market share.

As a corollary to that, one of the demands that is on all public transit providers in large metropolitan areas is to alleviate subur-

ban congestion. In some cases, we can do that. In many cases, it is highly expensive. It is very costly for us to do and if we undermine our core market where we are very efficient and say, "Go ahead and locate anywhere in the metropolitan area and we will pay whatever it takes to provide public transportation services there," we are essentially undercutting our current market. We are going to lose market share because we will never get as big a market share in areas where we are less efficient.

I think that when we think about these things we need to look at the long-run consequences over a decision and support areas where we are highly efficient and concentrate our resources in many regards in those areas.

Mr. BORSKI. Does the gentleman from California have a question?

Mr. BAKER. No, but I have a series of questions I would like to submit for the record so that we don't hold you guys.

I am interested not in market share but transit ridership. Is it increasing? Is it decreasing? Is it increasing in the rural and suburban areas? What are your suggestions for doing that?

I have small transit operators that get 14 percent return and I have big ones like BART in the Bay Area that get a 50 percent return. At some point, the taxpayers must get a return. It is a difficult question in suburban areas.

Mr. VOITH. And within systems there is a great deal of variation. We have bus routes in the city of Philadelphia that are unsubsidized that are part of our system. We have other routes that are highly subsidized. So it is not just a comparison between us and another town's transit system. There is a great deal of intra-region shifting of resources that are implicit in transit service. It is a seriously difficult question.

With regard to ridership, big city transit agencies have been hurt pretty badly in the northeast because of the economic recession, but in the last couple of years I think we have been holding our own.

Mr. RAPHAEL. I think with the small transit agencies, particularly in rural areas—their evolution really began as service providers to the transit-dependent, which still makes up a very large part of their ridership.

I think there is evidence that as rural public transit agencies become better established and more institutionalized that they reach out and expand their ridership and provide commuting trips. The local transit system is not just a nutrition bus or medical transportation system, but it starts to become more of an access to jobs and work. In that way, the ridership would expand and the paying ridership would expand as well. We would assume that that payback you are talking about would change as these transit systems become better established and not simply a welfare bus as they were viewed originally.

Mr. HARTLEY. And in West Virginia, some systems are experiencing increases and some systems are holding their own. There are a few systems that are experiencing decreases. West Virginia has been a depressed economy for the past several years, but we see a light at the end of the tunnel and would hope that your policies and decisions in the future help them to make that light a little bit brighter.

Mr. BORSKI. If there are no further questions, again let me thank our panelists for their input today. It has been very helpful. We appreciate your coming to Washington, D.C. We will look at your testimony very closely and try to help the transit systems of rural and urban America.

Thank you very much.

Our third panel is Mr. Raymond Chamberlain, Senior Vice President for Freight Policy, American Trucking Association, Washington, DC.

[Witness sworn.]

TESTIMONY OF RAY CHAMBERLAIN, VICE PRESIDENT, FREIGHT POLICY, AMERICAN TRUCKING ASSOCIATIONS, INC.

Mr. CHAMBERLAIN. Mr. Chairman and members of the committee, thank you for the privilege of appearing before you today on behalf of the American Trucking Associations. I come to this position from recently having spent 6 years as the executive director of the Colorado Department of Transportation, so I am a new-boy-on-the-block in regard to this activity.

I would like to share with you first the request that my written testimony be placed in the record.

Mr. BORSKI. Without objection, your prepared statement will appear in the record.

Mr. CHAMBERLAIN. Thank you.

In a quick summary of the information we have submitted, we would share with you that as you perhaps know, the trucking industry insofar as ATA is concerned is a federation of over 40,000 member companies employing approximately 8 million people and has revenues making up approximately 5 percent of the gross domestic product—in other words, some $300 billion of revenue each year dealing with some 3 billion tons of freight.

Based upon that, we look forward to the turn of the century in the context of your infrastructure investment. As we see it, the number of vehicles that we will be dealing with will only grow about 8 percent by the turn of the century, but the freight tonnage we will be handling will grow by 30 percent and the vehicles involved will generate another 31 percent of vehicle miles travelled, in spite of all that can be done to relate this to intermodal movement, which is a very big activity at this time.

So the bottom line is that we seek a safe transportation system, intermodal in characteristics, which will promote the efficient movement of goods and people. As you have heard from Mr. Slater and other witnesses this morning, clearly we are not investing in the infrastructure at a level adequate to even maintain the system let alone improve it to accommodate the increase in population and their particular freight needs.

So we think the inadequate historical investment emphasizes the importance of early enactment of the proposed National Highway System in order to try to reduce as much as possible the disinvestment currently going on. As you have already heard this morning, it would take some $62 million a year to improve the system while we are actually currently investing on the order of $26 billion. In our written testimony we show some graphs to illustrate that particular difficulty.

The substance leads down to the decision on how you deal with the problems. We suggest that it is clearly a matter of priorities. If you don't have enough money to do the whole job or improve the system, then clearly you need to prioritize and do the best you can. So we suggest that a part of the solution of prioritization also has to be dealt with by reducing in every case it is possible diversions from the intended user's fee orientation that public policy has been based on for so many decades. In other words, trust back into the trust fund.

In terms of the trucking industry's contribution, I draw your attention to the fact that this industry paid nearly $20 billion in Federal and State highway user fees, representing approximately 34 percent of the total paid by all motor vehicles, specifically paid nearly $8 billion into the Highway Trust Fund, or 51 percent of the total paid by all motor vehicles in that area.

So what are the benefits of all this investment? Why is it important?

Our assessment says that if we are to compete internationally on a paradigm for business management of just-in-time manufacturing, then you have to have a transportation system that works in a seamless manner for all of its modes. We believe that that is doable under enactment of the National Highway System followed in close order by the most careful planning possible for a Multimodal National Transportation System, perhaps to be enacted incidental to the next reauthorization.

Of course a part of the issue is the promotion of international competitiveness. When we see all that come together, we believe that the failure to adequately invest in America's transportation infrastructure is itself a tax on future economic growth. We believe that that must be dealt with.

Perhaps to give the committee two specific examples where modest activities—in a national sense, at least—a case example of investment pay-off. Let me use first of all the so-called "Mousetrap" project in Colorado where Interstate 25 and Interstate 70 cross in the Denver metropolitan area.

This particular facility was originally designed more than 30 years ago to accommodate approximately 70,000 to 80,000 vehicles a day. It is now being rebuilt in order to meet the growing Denver metropolitan area and regional economic need because the current flow is 300,000 vehicles a day. I believe it is easy to envision that if you did not have the capacity to invest in infrastructure so that you could not deal with that growth from, say, 80,000 vehicles a day to 300,000 vehicles a day, the economy would be in deep distress.

The next case example relates to your question about the European study tour of the way in which highway work is done in Europe. You have heard testimony regarding new pavement and things of that nature. Let me give you a high pay-off example of testing equipment and research. This involves Interstate 70, which serves the tremendous tourist industry of Colorado, the ski industry.

We have set in motion a project—after having been privileged to have one of our team go on the asphalt tour and another member of our staff go on the concrete tour—we were installing a 100,000

ton asphalt overlay project, got about one-fifth of it done one fall. By the next spring, it was coming apart.

We used the $1 million that we had invested in European laboratory test equipment, completely redesigned the asphalt mixes being used, and our departmental economists estimate that it has saved the Department some $5 million. In other words, $1 million investment in test equipment that came into being because of the enthusiasm generated from that tour on one little project alone saved itself five times over.

I close my remarks by saying to you, as we in the trucking industry look at the National Highway System of about 159,000 miles, that we believe it to be absolutely fundamental to the United States as the foundation and basic connector for the long-term planning for and development of an integrated multimodal transportation system. As such, it is extremely important that the Congress approve the National Highway System as soon as possible in order that the States can continue to plan and prioritize their annual budgets so as to minimize the disinvestment now taking place for lack of funding and lack of assurance of a predictable flow of funding.

Years of effort by the States, the MPOs, local people, and the Federal Highway Administration has led to the National Highway System proposal now before the Congress. The course of action is apparent and it is essential to the public welfare and sustain of jobs.

So as approved, the National Highway System we believe is important not only for guiding the prioritizing of Federal, State, and local transportation budgets, but it also is essential to have an improved NHS that can guide land use planning at the local level of government. Further, a defined National Highway System will contribute greatly to the ability of air, water, and other environmental planners to contribute to transportation management systems that will assist in meeting our national goals for a clean environment while maintaining a dynamic economy such as to keep our people at work in meaningful jobs.

Mr. Chairman, I thank you for the privilege of appearing before you on behalf of the American Trucking Associations and its some 40,000 member companies.

Mr. BORSKI. Mr. Chamberlain, thank you very much for your cooperation and your testimony. We have a few questions for you, sir.

Some of the testimony to be offered today cites a DOT study that highways in poor condition cost users as much as 30 percent more per mile to operate on than highways in good condition.

Is that consistent with the experience of your members?

Mr. CHAMBERLAIN. Yes, sir, it is. In other words, if you have a lot of pot holes, the impact of those pot holes on front-end alignment and additional tire wear and fuel consumption—that appears to be a reasonable number.

Mr. BORSKI. You cite the need for a greatly increased investment in highway infrastructure. Where will we get the money from?

The representatives from the building industry will testify later this morning that a 10 to 15 cent increase in the fuel tax should be enacted to provide these additional revenues.

Would ATA support this?

Mr. CHAMBERLAIN. Our position as an association is that we much prefer that the current user fees being collected cease to be diverted for other purposes, however important those other purposes may be.

Mr. BORSKI. Recapture the gasoline tax for infrastructure first?

Mr. CHAMBERLAIN. That's correct. That is the first priority. After that, we certainly stand for the proposition that the trucking industry will be prepared to pay its fair share under reasonable assessment of cost allocation.

Mr. BORSKI. In your testimony, you refer to the under-funding of the highway and bridge program. You also estimate significant growth in freight tonnage. It appears that we may be facing a time when we need to look at revenue sources other than fuel taxes to support the Highway Trust Fund.

Has your organization considered other revenue sources that may be used to support highway and bridge infrastructure needs?

Mr. CHAMBERLAIN. Our emphasis is on the two-tier system of registration fees and related fees of that nature and fuel taxes. Some of the two we believe can generally be crafted to represent all of the theoretical foundations on which highway finance needs to take place. We certainly will analyze and look at the pros and cons of each and every proposal for other sources that may be on the table from whatever source.

Mr. BORSKI. On page 10 of your testimony, you refer to the North American Free Trade Agreement and the need for a suitable transportation system for raw materials and finished products.

Are you satisfied that border highways and bridges are adequate to accommodate the traffic demands under NAFTA?

Mr. CHAMBERLAIN. Not satisfied. Certainly as growth takes place we do believe that some modest additional accesses will be necessary but that the biggest issues really are institutional in nature that currently constrain the efficient movement of goods at the borders and are not really capital oriented.

Mr. BORSKI. Later testimony will refer to the use of inconclusive data and intuitive reasoning in the establishment of priorities for meeting current highway, bridge, and transit infrastructure needs.

Is your organization satisfied with the evaluative tools currently used by FHWA to estimate our highway and bridge needs?

Mr. CHAMBERLAIN. Not as they stand today, but we have great confidence that as the States, working together with FHWA and AASHTO, continue the development of the seven management systems that we will in time have the tools that on average everybody is reasonably satisfied with.

We are pleased with the progress, which itself simply says that the tools are under development and will emerge in due course.

Mr. BORSKI. The gentleman from California, Mr. Baker.

Mr. BAKER. Thank you.

I would like to thank you for your testimony and especially for mentioning the gas taxes being diverted away from highways and rails. I have long contended—and I am far from being a Keynesian liberal—that if we take that same amount of money and put it out into road projects based on State priorities, the funds could be put to work in 6 months and tax revenue back to the Nation would be

even greater than sitting there in the great hole known as deficit reduction. I appreciate you bringing that up.

Second, I appreciate the support that you gave me as one of the four authors of 108 and 111 in California that added $20 billion to the rail and roads. You not only supported it, but you put up a big chunk of the cash. $4 billion of the $20 billion came from weight fees and gas taxes. Without the support of the truckers, it would not have passed in California. Now we are getting a little ahead of the growth curve out there, thanks in part to the recession, but also thanks in part to this road building and rail building that we have gone on to.

I would like to thank you for that and for being here.

I understand that you have a trip with Chairman Mineta planned.

Mr. CHAMBERLAIN. I have a trip planned, yes. Thank you very much for allowing me to come on early this afternoon.

Mr. BORSKI. Thank you very much, sir, for answering our questions.

On our next panel we will have Mr. Francis Francois, Executive Director of the American Association of State Highway and Transportation Officials and Mr. Anthony Chargin, Deputy Associate Director of Energy, Manufacturing, and Transportation Technologies of Lawrence Livermore National Laboratory.

[Witnesses sworn.]

Mr. BORSKI. Thank you very much.

Again, let me remind each of you that your full statement will be printed in the record and we would ask you to proceed in a brief oral presentation, if you will.

Mr. Francois.

TESTIMONY OF FRANCIS B. FRANCOIS, EXECUTIVE DIRECTOR, AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS; AND ANTHONY K. CHARGIN, DEPUTY ASSOCIATE DIRECTOR FOR THE ENERGY, MANUFACTURING, AND TRANSPORTATION TECHNOLOGIES PROGRAM, LAWRENCE LIVERMORE NATIONAL LABORATORY (LLNL)

Mr. FRANCOIS. Thank you, Mr. Chairman.

I am Frank Francois, the Executive Director of the American Association of State Highway and Transportation Officials, also known as AASHTO. In our statement for the record, we have responded in detail to the nine issues that were raised by the committee. I will try in no more than 1 minute per each issue to run through them very quickly right now, if I might.

The first issue raised was the question of the needs of our highway, bridge, and transit infrastructure. That has been discussed at length already here this morning. Our approach is to rely primarily on the USDOT's condition and performance report, which Mr. Slater and Mr. Linton both talked about.

With respect to transit, though, we would also call to your attention a 1993 GAO report that compares estimates made by AASHTO, APTA, and FTA in the year 1992. As that GAO report indicates, there is wide variance in the estimates of these needs. Some of that goes to the fact that the FTA at that stage was not looking at the operating expense issue. There are differences be-

tween the AASHTO and the APTA numbers also, but what all three lists of numbers say is that we are significantly under-funding transit right now just to hold our current share. If we want to expand that share, we are heavily under-funding.

Why would we want to expand it? We may need to because of the Clean Air Act, among other things. If we want to truly change our land use patterns and utilize transit more in changed land use, this means added cost also.

On the highway side, that same report indicates that just to maintain conditions and performance out there we should be spending on capital some $51.6 billion per year. If we want to improve it to where it would be more acceptable to the American people, we should be spending $67.3 billion on capital. What are we spending? We spent $36.1 billion in 1991, and $38.7 billion in 1992. That $38.7 billion in 1992 was therefore $12.9 billion less in capital spending than what we say is the minimum need.

Given this under-funding, obviously priorities are an issue. You have asked about that. Put very simply, the first priority for both highways and transit must be to maintain the current situation, to deal with emergency situations, and then to try to address some of the capacity problems we have.

The second question you asked was about the adequacy of current funding levels to meet needs. I think I have already addressed that, Mr. Chairman. I would note that with respect to transit funding, the Federal share had been dropping steadily since 1981 until the ISTEA. If we can fully fund the ISTEA, it will reverse that trend. But even so, if you adjust for inflation, the dollars are still a lot less.

During the 1980s, the States role in funding public transportation has risen sharply to the point where last year, according to our survey, a little over $6 billion of State funds went into transit, which is substantially more than the share of Federal dollars.

Turning to America's highway system, the truth is that we are slowly starving it to death. Each year, the engineering laws of nature are wearing out our highways and bridges at a faster pace than we can compensate for with our current funding levels. Given these levels, Americans will continue to see the highway system, our pavement, our signs, our bridges, drop below what we think is an acceptable level.

We are pleased to see that this subcommittee is focusing on the consequences, Mr. Chairman, because we need to talk a lot more about them.

The third issue you raised was how the Federal Government can facilitate highway, bridge, and transit infrastructure improvements. The first one, obviously, is to fully fund ISTEA, which is one that would help immensely. We also support enactment of the National Highway System legislation. We think it is very important to focus investments at both the Federal and State levels on our major highway systems in this country.

You raised the issue of standards. With respect to standards, it is obvious that in some areas the Federal Government does have a very important role to play, certainly in the air traffic control system and the IVHS technology where we must have compatibility across this Nation.

With respect to engineering design standards, for years we have worked with the Federal Highway Administration through the AASHTO member departments in a cooperative venture to develop standards. We think that process has worked reasonably well.

You asked about innovative financing. Mr. Slater talked about that briefly this morning. Jointly, the States and the Federal Highway Administration are now trying to implement the flexible financing provisions in ISTEA. We are working together. We have created a special task force for that purpose. Quite frankly, thus far there hasn't been too much exploitation of those provisions in ISTEA. We are hoping we can do better.

With respect to regionalism, which you also raise, there have been a number of examples in the past of States and regional areas working with each other. This metropolitan area has one outstanding example—Metro—where the local governments, the State governments, and the Federal Government came together to build the Metro system.

More recently, we are seeing some interesting cooperation in the IVHS area. We have the "Advantage 75" project running from Canada to Florida. We have the I–95 corridor running from Maine to Virginia. In both cases, it is the States, local governments, Federal agencies, and the private sector coming together to work with each other.

One regional area within a State that I would call to your attention is the Houston area where in the IVHS arena you have the Houston Intelligent Transportation System, or HITS program, that brings together Houston, the Texas Department of Transportation, et cetera. During the recent IVHS meeting in Georgia that I just came from last night, this little brochure about HITS was handed out, Mr. Chairman. We will make these available to you. I have a few copies with me.

The fourth issue you raised was the roles of State, local, and private sector resources in dealing with the revitalization of our Nation's highway, bridge, and transit infrastructure. Currently, as we well know, the States and local governments are the primary source of funding for the 3.9 million miles of roads and highways. We do not see that changing. The Federal share of total highway spending has been hovering at about 21–22 percent, and the Federal share of capital spending at about 41 percent. We hope we can sustain that. Realistically, the ISTEA doesn't really do that over the long haul as needs go up. We know that States and local governments are going to have to find more money to help that process along.

As I outlined in our testimony, AASHTO for several years now has been looking at alternative sources. We have an NCHRP report underway, and that is reported on in our written testimony.

Your fifth issue was what stops can be taken to ensure Federal capital assistance programs do not create perverse incentives? We believe in the flexibility provisions of ISTEA—if there was a problem, this probably solved that problem.

Six, discuss the pros and cons of the European approach to building highway facilities.

There are several observations we could make on these two tours: first of all that the European nations that we visited are for

the most part utilizing technology developed in the United States. It is not their technology and equipment that are really different from ours, but other factors, especially three key ones.

First, these European nations have made a commitment to bear the larger initial cost of constructing highways that have stronger bases, are thicker, and which are often better drained than our highways, with a planned life longer than ours. Our States and the Federal Government could make the same commitment, but we haven't. It will cost more money if we do, and without increased funding, it simply means that we build less miles if we follow those particular practices.

If we want to do it, we can because we know how. But thus far, our Federal Government has said that the 20-year planning life for highways is the proper one. In Europe it is 40 years and that is part of the problem.

Second, in Europe there is a high degree of cooperation between government and industry where they work in partnership on research, implementation of new processes and the equipment, in design of their pavements, and in contract administration. Traditionally, in the United States we have kind of built a wall between the public and private sectors. The public sector has prescribed a recipe as to what we want built. The private sector has responded to that recipe, and we haven't talked too much with each other about the result.

That is changing. In part because of the European tours, we are cutting windows and doors in that wall. We have the concept of partnering that is now in place in most States. We are working a lot more closely with each other. We are moving toward performance contracting. So I think we will see a lot of changes in that area.

Third, in Europe there is a strong commitment to early preventative maintenance on their motorways, with highways undergoing maintenance before any visual distress has developed. Mr. Slater referred to this also. In the United States we tend to wait until visual distress is apparent and that is several months to perhaps several years later than in Europe.

The new pavement management systems and the new bridge management systems will certainly help. The bottom line issue remains funding. They do maintain more often and it is more costly, but not over the long-run because if we don't get to it in time in this country it costs even more.

The importance of improved highway and bridge and transit structure to the Nation's urban areas was another topic. No urban area can survive and function without an adequate highway system and in many systems an adequate transit system. This should be self-evident, but many don't seem to see it.

In America, nearly all freight movements are by trucks over the highways. The facts therefore are that if you close down our highway system in an urban area, then factories cannot receive materials, stores cannot receive goods, manufactured goods cannot move from the factory, and the delivery of services will essentially stop. People would also not be able to move about by motor vehicle, but with everything else stopped, it probably wouldn't matter too much. The urban economy would essentially cease to function.

Where a rail transit exists, people can move without highways, but buses also could not operate because their rubber tires roll over streets and roads. Of course, a transit system in and of itself does not move freight.

So highway, bridge, and transit infrastructure is absolutely essential to our Nation's urban areas. The more efficient our transportation system the better the economy of that urban area will be. Again, IVHS can help a lot in this area. It is a multimodal type of technology. Again, I would refer to the Houston situation.

Item eight, potential effect of the Administration's budget proposal on highway and transit infrastructure. If Congress is able to approve the nearly full funding of the ISTEA that the Administration's budget proposes, it would be an important help for our highway and transportation infrastructure. But of course that probably may not happen because of a $400 million shortfall in outlays that we now face; and even if it is fully funded, it doesn't close the gap.

Finally, Mr. Chairman, you have asked how unfunded mandates have affected State and local government infrastructure investment strategies. AASHTO opposes Federal mandates and sanctions. Especially frustrating to our member departments are mandates over which they have no jurisdiction and which result in sanctions when others do not meet the mandate.

Under the Clean Air Act amendments of 1990, Congress imposed a whole new set of planning and conformity requirements, but did not provide the funding for State and local governments to do the planning to carry those out, a typical mandate situation. Currently, the Clean Water bills are pending in both bodies of the Congress. We are concerned about the cost of those also. To our understanding of the bill, there is no intent to provide the funding necessary to carry out the new mandates.

Some mandates have very laudable goals, but they still cost money. One of those, obviously, is the Americans with Disabilities Act, which in Pennsylvania alone is costing about $100 billion for curb cuts.

Mr. Chairman, I think I have summarized everything in my testimony. I stand ready to respond to any questions you may have.

Mr. BORSKI. Thank you, Mr. Francois.

Let us break for a call to the House and we will return as soon as we can and begin with you, Mr. Chargin.

[Recess.]

Mr. BORSKI. Mr. Chargin.

Mr. CHARGIN. Thank you very much, Mr. Chairman, for giving me the opportunity to testify in front of this subcommittee. I think this is a very important subject and our laboratory would like to contribute to it.

My name is Anthony Chargin. I am in charge of the energy, manufacturing, and transportation program at Lawrence Livermore National Lab. We are a fairly large institution. If we were a private company, we would be 325th on the Fortune 500 list, just to give you an idea on the amount of work that goes on.

I would like to take my written testimony and submit it for the record and summarize it for you here today.

Mr. BORSKI. Without objection, your prepared statement will appear in the record.

Mr. CHARGIN. There are three points I would like to cover.

First, the R&D funding is inadequate. However, not all is lost because a lot of technical work has been done for other areas and the transportation field can leverage its needs with the results obtained in other areas.

Second, I would like to suggest that we need to change the piecemeal approach to transportation R&D where things are done on a project-by-project basis and nobody really understands the system. I think the R&D needs to be done from an overall point of view.

And number three, there needs to be a partnership among all the organizations that people have talked about here already that includes Federal, State, and municipal governments as well as universities, industries, and let's not forget the National Labs and the capabilities they have.

It is hard to demonstrate how much to spend on R&D. Mr. Slater introduced into evidence a Washington Post article. I read that and it says that people usually underestimate the amount of R&D—how much contribution it can make to invention. It says that 100 years ago, in the horse and buggy days, people estimated that there would be congestion because we couldn't get rid of manure on the streets. They had forgotten the possibility of inventing cars.

The same thing exists today. We talk about moving people from cars into mass transit. It turns out that United States automakers spend $11 billion on trying to keep people in cars to make sure they keep buying them. FTA spends only $24 million trying to get them out of cars. I believe the winner is clear. People will stay in cars as long as there is no investment in R&D.

In FHWA areas, the technology is at about the stage of the stethoscope in the medical field. What I mean by that is that when bridge inspectors look at the bridge, they drag a chain to listen to the bridge, which is about as good as the doctor could do 100 years ago. Now we have better tools and they should be applied in transportation.

In order to improve the total contribution R&D can make into the transportation field, we need to stop looking at it in a piecemeal way. We need to look at it as a system. We talked quite a bit here today about retrofitting of columns and how successful that was in California. However, we forget that when we put steel around the column we eliminated essentially the only tool we have for inspecting columns today, which is visual inspection. We no longer can see cracks in concrete. Now we do need to develop the tools to look inside the steel and concrete to see the health of a concrete support.

At the laboratory, we have developed a number of methods that essentially can be put on a truck and taken on the road that can be used for studying the state of health of these structures. I will just mention briefly dual-band infrared, which measures temperatures; ground-penetrating radar and electrical resistance tomography which measure the moisture under the road. As some have already mentioned, moisture is a killer to the roadway.

We propose establishing some significant centers where some of these technologies can be integrated into one package. At Livermore, we would be happy to be a center for non-destructive evaluation for bridges. We are talking to FHWA about the subject. Cur-

rently, they are only talking to us about funding one or two specific technologies. I would claim that that is insufficient. We need to put all the technologies on the truck so that we can evaluate the overall health of a bridge, just as the doctor has all the technologies at his disposal to evaluate the state of health of the patient. Piecemeal won't really get us there.

Another suggestion we have is to establish an advanced technology transportation assistance center. Technologies would be available to small and medium-sized businesses. Big companies have the capability, but small to medium companies do not have the technologies that we have. We would like to open our doors and make that available to them.

We got this idea from a non-profit organization called Calstart in southern California. They are all eager to get the help. However, Government assistance is necessary to provide that help.

Previous speakers have asked why the road falls apart. The only way to test roads nowadays is to invent a chemical, put it on a strip, and test it for several years. For years, we have had a shale oil program for recovering shale for energy use out of the rock in Colorado and Wyoming. During that process, we learned quite a bit about why oil sticks to rock. That chemical capability can be brought to bear on the asphalt issue so that it can be understood and one need not wait for 5 years of laying down strips of asphalt.

Finally, I would like to say that in partnering the R&D needs to be leveraged from all sources of money. One can't do it alone anymore. There is a tremendous enthusiasm among the Federal agencies, among industries, and among the National Labs participating in President Clinton's initiative. And we are an active participant in that. I believe such a partnership in the transportation infrastructure field is possible so that the full Government resource can be brought to bear on the problem.

There are examples already. The Department of Energy and the Department of Transportation have signed an MOU on IVHS. It has not been put in effect yet in terms of real work, but there is at least a beginning and we should build on that.

The Government should encourage implementation of rules that will make it easy for one agency to partner with another. Right now, those are not very easy. At our laboratory sometimes we get criticized by the Department of Transportation because we are very difficult to deal with. We don't feel that that is our problem alone, but it is the problem of various agencies and their rules. I think you might wish to look into that a bit. The Federal acquisition regulations allow for partnering among various agencies in acquiring data from one to another.

Since infrastructure is something that is publicly provided, used by the public, and paid for by the public, we think the Government should take the lead in this issue and show the innovative ways R&D can be brought to bear to solve this problem. Industry cannot be left alone. They are not always the end user nor the provider of the service.

I believe in this way of partnering from all the agencies within the Department of Energy and the Department of Transportation, the Department of Defense, and all those folks that have been mentioned before one can bring significant dollars to the projects at

hand, specifically the non-destructive evaluation center that I just talked about.

Finally, I would like to say that in your opening remarks for the last hearing you mentioned that infrastructure is not a glamorous field. I would like to disagree with you on that, if I may. We have looked at it. We are an R&D organization. We think of ourselves as working in very interesting technical areas. We have looked at transportation and we think it is a very exciting field. We actually evaluate infrastructure as the area in which we can make the most immediate impact in the near term. I think we can do that together if we work on it.

I thank you very much for the opportunity to testify. I would like to invite you to the laboratory to see some of the technologies that exist there that are applicable to transportation.

Thank you very much.

Mr. BORSKI. Thank you very much.

The gentleman from California, Mr. Baker.

Mr. BAKER. Thank you very much, Mr. Chairman.

Thank you, Mr. Chargin.

You mentioned four technologies. We have some 1,700 bridges that need retrofitting. Where do you begin when we just have a normal State budget with no extra appropriations for it, and we don't know where the epicenter is going to be?

Could you slowly explain, and simply explain, the four technologies? Can they all be placed on a truck and mobile and taken to the various sites in southern California?

Mr. CHARGIN. Yes, they can. I have some photographs of the x-ray tools. I will have someone bring that to you.

The first one is a column that we have in the laboratory that was provided to us by the Department of Transportation in the State of California. It is a two-by-two foot column, about 5 feet tall. You will see on it that there are some lines marked that the person looks at to see cracks. When you look at the next picture, you see the x-ray.

Now this is back to medicine. The first is the equivalent of a stethoscope. You visually inspect it. The next one is what you can see in an x-ray. You can't quite tell much. You can't tell if there are any cracks. The key is in the third picture, which is now a computer reconstruction of the x-ray picture. So what you do is take several x-rays through the column, maybe as many as 30. Then you put them in a computer and you derive an image.

This has been done in a matter of hours, so this is not a complete reconstruction, but you can see there that there are no cracks in that column, even though the visual inspection said that there may be.

In answer to your question, that can go in a truck. That is the key technology that would go on the truck as far as the column integrity is concerned.

The next one—the ground-penetrating radar or infrared—looks at the roadway to see whether it is separated. That would replace the chains that you would drag on the bridge to see if whether there is delamination of the roads. All of that fits on the same truck.

With the computer capability that we have, I believe those things need to be on the same truck, and you can't contract out one technology with one company and another technology with another company. There should be an integrated contractor that puts them all on the same truck, even though separate technologies can be developed by separate organizations.

Mr. BAKER. You mentioned oil shale and the ability of oil and rock to mix. How does that play into the highway system? And isn't one of the byproducts of oil shale and the first byproduct asphalt?

Mr. CHARGIN. It turns out that shale oil has a value on the marketplace of $20 a barrel. One can't cook the oil out of the rock that cheaply. The value of the oil shale as an asphalt additive is $120 a barrel. Processes that are in place today can easily develop shale oil for less than $120, perhaps maybe $30 or $40. The shale itself has a lot of nitrogen in it, which is what makes it attractive to the rock, which is what binds the rock together.

When we spoke with the company, they were extremely impressed with our chemical capability. They said that if we got busy working with the asphalt, they wouldn't have to spend 10 years testing a strip because we could answer the fundamental questions as to why the oil and rock hold together. So in this case it is possible to leverage maybe an energy resource of 50 years from now for a near-term result of getting better asphalt. The initial test results for the asphalt additive with shale oil are that they may be twice as good as normal asphalt.

Mr. BAKER. What kind of results have you had in meeting with State and Federal highway officials as far as putting some of this technology to use?

Mr. CHARGIN. Almost without exception they are all excited about technologies that exist in our laboratory and all would like to use it. The problem is where the money is to implement it in the field they are interested in.

Mr. BORSKI. Mr. Francois, you mentioned that about 30 States are using some form of life cycle cost analysis, which you say can result in more effective use of limited funds.

Why aren't all the States using this technique? Should FHWA encourage the other States to use it?

Mr. FRANCOIS. With respect to the last part of that question, they are encouraging and we have had a joint conference with the Federal Highway Administration and the States fairly recently on this. There is a report of that conference.

Considerable progress is being made. As to why they are not all using it is that some don't now fully understand it. Others have raised a number of questions. Some of those I put in my testimony.

I would be pleased to provide you with a response to questions that we did in a survey of ours. Indeed, the survey results would explain this to you.

But they get into such issues as to what life you assume, short-term versus long-term projects, between different kinds of pavements, what interest rates are assumed, how far out—there are a whole lot of unanswered questions. Each State that has tried this is trying to work with those. With the help of the Federal Highway Administration we hope to work our way through them.

Mr. BORSKI. Mr. Francois, you say in your discussion of NHS design standards that the Federal Government should not establish any design standard for NHS highways.

Would there not be some value in having a national standard on, say, vertical bridge clearance or bridge weight limits so as to ensure that all NHS highways are at least passable by standard combination trucks meeting national interstate standards?

Mr. FRANCOIS. Mr. Chairman, on the interstate system of course we do have bridge standards, height standards, et cetera. Going back to my point on height standards, for example, with respect to things like IVHS and air traffic control—yes, you have to have those. Those are things that have to be nominal nationwide or you have some problems.

Our resolution refers primarily to the construction standard issue and the difference in soil conditions. Height is height no matter where you are in the United States, but soils do vary immensely. Asphalts vary immensely.

You are aware, for example, that the Strategic Highway Research Program spent about $50 million looking at asphalts. We developed out of that a new asphalt paving process called Superpave. Implementing that and understanding how the asphalt chemistry works will take time working in various States. It is very hard to do everything uniformly because in all there are about 100 different sources of asphalt right now. Different States have different suppliers. Those suppliers vary. Their standards have to adapt to that.

So our problem is getting into the engineering details. On the basic guidelines, you are absolutely right.

Mr. BORSKI. Would you like to comment on the suggestion that we should spend a substantially higher percentage of our highway budget on research and development?

Mr. FRANCOIS. We are very pleased about the increases we have had in research and we would like to see more. We have done very well in recent years. Going into ISTEA we were down to about .05 percent of the overall industry's cost going into research. We are substantially above that now. The ISTEA legislation provided considerable support for research. Just to pick the National Cooperative Highway Research Program; the NCHRP, for example, it was running before ISTEA at about an $8 million per year level. It is now running at about a $15 million to $16 million level, almost double.

That is good, but there is still a lot more that needs to be done. Non-destructive testing is clearly an area where a lot of work needs to be done. We know there are things out there that if we had access to would help us. Some individual States are working with ground-penetrating radar and with other techniques in their pavement management systems. In Europe, there are some machines over there that do combine several techniques into one. So there are areas where considerable more research should be done.

We are also identifying some new needs. At the most recent meeting of our Standing Committee on Research, for example, an issue came up of the deterioration of steel pilings. Very little is understood about it. As we check back, we find the last research was done back around 1940. A lot has happened since then and a lot

of interstates—including some of yours, Mr. Chairman, where the pilings have gone through contaminated soils—we are not quite certain what is going on. We need to find out.

So there are new issues coming up all the time.

Mr. BORSKI. Any further questions, Mr. Baker?

Mr. BAKER. I have two brief questions.

In your view, with flexible funding provisions of ISTEA, would they suggest any statutory or regulatory changes needed to make the process work better? Have we over-managed?

Mr. FRANCOIS. Mr. Chairman, I don't think we now know the answer to that question. Our position with respect to amendments to the ISTEA at this point is not to make any until we give it a chance to really work. We are 2 to 3 years into some new processes. We think those processes are generally working. We need to give it time—at least 5 years—before we really know where we are. I think we could live with most of the things that are in there. Some people want to change this or that, but with respect to the planning processes, we think they are generally working. We are learning. We are moving along. The last thing we want to do now is have a sudden change in direction to go somewhere else.

I think we need to live with this process long enough to see whether it really works or not. By this time next year or the year after, we should have some answers.

Mr. BAKER. Let me give you one of the more famous regulatory wrinkles in ISTEA, the requiring of crumb rubber to be used in asphalt.

I don't want to just get you to bash crumb rubber as good or bad in it, but how is it opposed to shale oil or other additives? If we want to extend the life of the roads or build better roads, rather than just be politically correct, is crumb rubber a help? Should we remove that restriction? Should we look at shale oil?

Mr. FRANCOIS. I have spent a lot of time on that particular issue and I have explained that in my written testimony to you.

Crumb rubber is a latex modifier, essentially. There are about 100 or 150 different modifiers out there. Depending upon the road conditions you have, the traffic you have, the asphalt you have available to you, the aggregates you have available to you, different modifiers do different things in different areas. There is no one answer that fits everything.

Mr. BAKER. We have required that nationwide or we will withhold funds from the State if they don't. But you are saying that in different areas, it may work, depending on conditions like weather, wetness, and snow. If it doesn't work, aren't we being a little foolish to require it nationwide?

Mr. FRANCOIS. Mr. Chairman, AASHTO's resolution on this urges repeal, or at the very least, modification of it, for precisely the reasons you have outlined. California, Florida, and Arizona have had some good experiences with it, but they don't use it everywhere either. Other States have tried it and have been unable to make it work at all because of their aggregates and the asphalts they are using.

It is said by some that it is simply a technology transfer issue, but you can't transfer technology if it doesn't exist.

So we still have a lot of research to do if we really mean this, but there are other additives, too, that have merit. We need to look at all of them more than we have.

Mr. BORSKI. If there are no further questions, we want to thank our panel very much.

I invite the next group to take their seats in a few minutes. We will break right now briefly to run to the House Floor for a vote and come back and take your testimony in a very short amount of time.

[Recess.]

Mr. BORSKI. On our fifth and final panel, we have Mr. Eugene McCormick, Chairman, Highway Advisory Council, American Road and Transportation Builders Association; Mr. Robert J. Desjardins, Executive Vice President, Cianbro Corporation, representing Associated General Contractors; and Mr. Thomas Musser, President, Tri–M Corporation, representing Associated Builders and Contractors.

[Witnesses sworn.]

Mr. BORSKI. I think we have about 10 or 15 minutes before the next series of votes, which could take a long period of time. Let me again suggest that your entire statements will be made a part of the record and ask that in perhaps 5 minutes or less each of you could make a presentation.

Mr. McCormick.

TESTIMONY OF EUGENE R. McCORMICK, SENIOR VICE PRESIDENT, PARSONS BRINCKERHOFF QUADE & DOUGLAS, INC., CHAIRMAN, HIGHWAY ADVISORY COUNCIL, AMERICAN ROAD AND TRANSPORTATION BUILDERS ASSOCIATION; ROBERT J. DESJARDINS, EXECUTIVE VICE PRESIDENT, CIANBRO, CORP., REPRESENTING ASSOCIATED GENERAL CONTRACTORS; AND THOMAS MUSSER, PRESIDENT, TRI-M CORP., KENNET SQUARE, PA, REPRESENTING ASSOCIATED BUILDERS AND CONTRACTORS

Mr. MCCORMICK. Thank you very much, Mr. Chairman. I will try to be pointed, and thank you for submitting the written testimony for the record.

I would like to try to focus on three things that I consider to be particularly important.

We have heard a lot of testimony today regarding the needs on both the transit and highway and bridge system. I think it is amazing to see all the testimony agree very consistently from everyone. I would simply restate two numbers that have been testified to earlier this morning to emphasize the scope of the problem: one being the fact that at today's funding level we are falling about $15 billion a year short of maintaining road and bridge conditions in our county; and secondly, we have a $290 billion backlog on our highway system. That obviously indicates a very serious problem, obviously one of the major reasons you are conducting this series of hearings.

I would simply state for the record that our Constitution suggests that the Federal Government's role is to enhance interstate commerce. The National Highway System, in my mind—with the Interstate System as a part of that—is focused on that precise

question and the Federal Government manifesting its role in that sense.

The effort here in the House to move a bill forward this year we commend. We hope you are successful as we move forward to create the cornerstone of the future Federal-aid highway program.

Let me turn to financing. Mr. Chairman, I heard you mention earlier the little 10 to 15 cent gas tax that was included in my testimony. I would like to take this opportunity to perhaps put it in a little broader context, if you will. I would make a couple of background observations.

Number one, today the price that you and I all pay at the gas pumps when we buy our gas is the cheapest in our country's history. We have the cheapest fuel today than we have ever had, period.

Number two, we see continued growth of demand on the highway system. Travel increases at about 3 percent per year. However, consumption—and thereby revenues—are increasing only about 1 percent a year. Therefore, there is a growing lag between the revenue to support the system and the actual demand placed upon the system.

We at ARTBA would suggest a six-step road map to the future in terms of financing.

Step one, fully fund ISTEA. Today, there is a backlog of about $11 billion in Federal highway funds that have been apportioned to States that States cannot utilize because of the imposition of obligation ceilings. If that money could be realized during the balance of ISTEA's life over the next 3 years, that would increase the annual Federal program level $2 billion to $3 billion per year. So that is one way to get there, and I am not suggesting that these are easy steps at all.

Second, I think it is very important that the effort of the FHWA and the IRS, in terms of tax evasion, continue. We are beginning to reap the benefits of that, but that must continue. Some estimate the loss of revenue there at upwards of $1 billion per year. That can be part of closing the financing gap.

Third, the elimination of motor fuel tax exemption. Today, that erodes or loses about $500 million a year of revenue. With further clean fuel mandates it may well lose another $500 million a year. The elimination of those exemptions could thereby net about $1 billion a year to the Highway Trust Fund and to the Transit Trust Fund.

Fourth, recapture the 4.3 cent per gallon gas tax that is currently earmarked for deficit reduction. One thing that we believe could be very important as a tool in that regard is the legislation that has been offered by Congressman Wise regarding capital budgeting. It seems clear to us that certainly the day-to-day operational budget pressures within the Federal Government should be looked at in isolation from long-term investment strategies, which certainly seems to me to be consistent with the President's philosophy as well.

Fifth, after we succeed on those first four steps, then is the time to consider the 10 to 15 cent per gallon Federal gas tax.

Sixth, meanwhile, the program works not only at the Federal level, but also at the State and local level. Today, about half of the

investment is made through the Federal programs. The other half from revenues at the State and local government level. Obviously, continued revenue initiatives at that level must also be continued.

With that, I would like to close, Mr. Chairman. Thank you very much for this opportunity. In the interest of time, I look forward to any possible questions later.

Mr. BORSKI. Thank you, sir.

Mr. Desjardins.

Mr. DESJARDINS. Thank you very much, Mr. Chairman, and good afternoon.

AGC believes the needs of the Nation's highway and bridge infrastructure are well documented, as is the link between transportation and economic competitiveness. The earlier statements by Administrator Slater and Mr. Francois detail the significant needs of the Nation's highways and bridges.

AGC is concerned with what could be called the fragmentation of the Federal-aid highway program. Federal highway dollars are cut up in so many ways that funding major highway and bridge construction and improvement projects is extremely difficult. Clearly, there is not enough available resources to meet the needs of all the eligible programs under ISTEA.

Over the past several decades, the highway program has been used as leverage to force compliance with other Federal mandates. Specifically, AGC believes the mandated use of crumb rubber and EPA's proposal to mandate the use of ethanol will significantly impact highway funding.

I would like to make a few comments about crumb rubber that are not included in my testimony.

Research from the University of Maine shows that it is cheaper to use tire chips as fill compared to crumb rubber in asphalt pavement. Their research shows that the in place cost for tire chip fill is 15 cents to 25 cents per tire, compared to $25 per tire for crumb rubber-modified asphalt.

Scrap tires are a significant waste management problem in the United States. The strategy to resolve this national problem should be to provide a range of options for States to enable them to explore more effective disposal and reuse alternatives than the use of scrap tires in asphalt pavement.

AGC continues to promote the use of partnering and believes it has resulted in improvements to the construction process. My own company is partnering projects in Maine, Massachusetts, Connecticut, Maryland, and Washington, DC. One of our most successful partner projects is a new Severn River bridge in Annapolis, Maryland, being constructed for the Maryland State Highway Administration. This was the first experience in the use of partnering for both my company and the SHA and has had excellent results in avoiding disputes and keeping the project on schedule. Partnering also fosters the use of value engineering, which saves money and enhances innovation and quality improvements.

However, my company has had very limited success in having value engineering proposals accepted by State highway agencies. One of our successful experiences was the change from a pre-cast concrete deck to a cast-in-place deck on a bridge rehabilitation project in New York. This change resulted in a better quality prod-

uct and saved approximately $200,000. Most of the value engineering proposals we submit are not accepted because of what I call pride of authorship by the State agency or their design consultant.

Another common problem is the inability of the State agency to make a timely decision. AGC supports Federal Highway's effort to encourage all States to use value engineering.

The last issue I would like to address is the recent attention given to comparisons between European and United States highways. I would simply state that the United States highway experts have the knowledge, the technology, and the equipment to design and build European type highways. What is lacking is sufficient revenue to make the European type investment to build highways with a longer useful life.

Mr. Chairman, that concludes my remarks and I would be pleased to answer any questions you might have.

Mr. MUSSER. Mr. Chairman, my name is Tom Musser and I sincerely thank you very much for this opportunity to be here this afternoon. I will be very brief. Most of my comments have been talked about by somebody else and we are generally in support of those comments, so I will only mention a couple of areas that have not been touched upon.

Before doing that, I would second almost every statement that Mr. McCormick made about the diversion of the fuels tax to deficit reduction and other things. ABC strongly agrees that that should be put back into the Highway Trust Fund.

I would also bring your attention to another fact. Our research shows that for every dollar spent building new highways in a given area increases the output in the economy of that area by about $2.43. So it seems like that is an excellent investment. Also, for every $1 billion of new highway construction, it tends to increase jobs in that given area by about 24,000 workers. Again, that is a very positive impact.

In our area of the country, Mr. Chairman, I think the great example is our Blue Route and what it has done for that area, which supports that statement.

The other area that I feel we should think about, since we have talked all morning about the limitation of funds available for our highways and infrastructure, that we should take a look at raising the threshold of the Davis–Bacon Act to possibly $1 million for all Federal projects. By doing that, certainly we would get more miles of highway for our dollar. That, too, would be a good investment since we are certainly short on funds.

The other area I would mention very quickly is that I hope the committee in their deliberations would not extend any kind of warrantee or guarantee provisions other than what we have now. To lengthen that warranty or guarantee period would place a real burden on the contractors because obviously these contracts are all bonded by law. If we extend that out and ask our bonding companies to have the liability for a much longer period of time, it would certainly limit us from getting the bonds that we absolutely need and it would reduce the competitiveness of the number of contractors that participate that help to keep that cost down.

You have all my other testimony in written form, Mr. Chairman. In the interest of time, I will not go any further but simply answer any questions you would like to address.

Mr. BORSKI. Thank you very much.

Mr. McCormick, let me get back to your five points and tell you that I strongly agree with them. I think most members of this committee do. We haven't been successful, thus far, unfortunately. That is part of what I want the record to reflect in this series of hearings, that needs for the infrastructure are such that we should first recapture the dollars that have gone into the trust fund, and then do what we can with tax evasion, and then look at the real infrastructure needs for this country.

My fear is not just the 4.3 cents that went to the general fund, but what may happen in the future in the next go-around when we are desperately looking for dollars again. Because gas is so cheap right now, gas becomes an easy target for the rest of the Government, and one that we must be very diligent in opposing and making sure that the needs of the infrastructure are met first.

Assuming we can recapture and stop the diversion of gas taxes and not get the 10 to 15 cents added on for infrastructure needs, are there other ways you are looking at for funding the highway transit projects?

Mr. MCCORMICK. I think that is a good question because in the longer term obviously our fuel energy source may change, so there are certainly some very fundamental questions.

In the short term, I believe strongly—and my experience throughout the country would suggest that highway users believe in the highway user fee concept. They expect to have a good product in the end. I suspect that there have been cases where that has not been the case, but I think you have heard many testify today that there is a renewed effort from within the construction, engineering, public agency community to take the initiative, be innovative.

We have heard of expanded research efforts. Get that quality product out there that the user can appreciate and the user then increases his credibility and her credibility in the program. I think user fees should continue to be the primary source. In the longer term they are probably going to have to change structures somehow. In the short term, I suspect the gas tax will be the major source.

I also believe that ISTEA and how we are doing business today in terms of the planning requirements and the management system requirements will further provide us all the opportunity to manage, operate, and make the critical investment decisions better in the future so that we will be able to invest it wisely.

Mr. DESJARDINS. AGC supports Federal Highway's innovative financing efforts. Maybe they will come up with some new ideas.

Mr. MUSSER. I concur. I think ABC does that, too. I think we do have to watch—speaking from my own company, running 70 vehicles could be a burden. But I would certainly support that and do our share in that area. It may, however, be somewhat of a problem for those in the general population who would bear the financial burden.

Mr. McCORMICK. I forgot to touch upon toll financing. I think that is another mechanism we are going to see used more often to supplement the ongoing regular Federal and State programs. Again, its premise is based on the user being willing to pay the price for the value of what he or she receives. Today is a bargain as far as the highway user and what they pay to support the highway system, and to some degree the transit system as well. It is an unknown bargain to a large degree, Unfortunately.

Mr. BORSKI. I don't know the answer to this, but perhaps you do. We try very hard to make sure that the gasoline tax money is spent for infrastructure. Are the toll funds collected by the States used for the roads that tolls are on?

Mr. McCORMICK. In most cases, there are legal restrictions that those tolls can only be used for given facilities. There are a couple of States that have much broader latitude in that regard. But the general rule is that tolls go to either repay a particular project or a particular toll system.

Mr. BORSKI. There is an 18-mile stretch north of here that charges a little over a dollar—$1.25—that creates some congestion with the quarter. It is a very short stretch of the highway that that toll is on. I am just curious where those revenues go.

Mr. DESJARDINS. I know in both Maine and New Hampshire, the toll revenues there go to support the construction of other roads in the States.

Mr. BORSKI. Let me ask about the question we raised earlier and ask you to talk about it, which is the experience in Europe and the longer-lasting highways. I am particularly concerned about I–95 or the Blue Route. As we rehab them outside Philadelphia this year it is going to be a disaster.

Should we be spending more money to build these roads and have them last a whole lot longer?

Mr. McCORMICK. Yes, but I don't want to bias my comments. In a previous life I led the first two delegations to go to Europe that have been referred to, so take it with that degree of bias.

There is one thing that stands out clearly in my mind that was fully evident on both trips, and that was the fact that life cycle cost analysis and investing early in the facility more than pays for itself many times over in the long-term, but obviously that initial construction costs more in the short-term.

I became, myself, a very strong advocate of that. I am very excited about what I see with the FHWA now and the conference that was referred to earlier that is trying to bring more light to that. That was a very strong conclusion I reached.

Second, another very important point is the fact that in Europe there is a much higher degree of collaboration between the public sector and the private sector. Those barriers are coming down. I think that is to the mutual benefit of all. But we have nothing to be ashamed of in terms of our highway system. While we see them fundamentally willing to invest in that initial structure, the safest highways in Europe are 50 percent less safe than ours. Some are three to four times more dangerous. We have completely different demographics. We have a lot to be proud of. They have some things they can learn from us and we clearly see some things we can learn from them.

Mr. BORSKI. The price of gasoline is a lot higher in Europe. They don't have a dedicated source of funding, though. It is not dedicated. Is that right?

Mr. MCCORMICK. The tax in Europe is eight times what it is here in this country. The average tax in this country is 37 cents per gallon when you combine State and Federal tax. It is eight times. In most nations, they do not have dedicated funding. It goes into the general revenue fund, and then they compete for their share of the budget. They look at us enviously because we have a dedicated Highway Trust Fund.

If you look at the bottom line of how much they get back, they still wind up getting back at least twice of what we do, even though we have a "dedicated fund". They are willing to pay the price and they are willing to invest. The agencies have the credibility of the users, an extremely good job in terms of preventive maintenance that we have heard before—we need to invest more earlier to save more longer.

Mr. BORSKI. Let me ask one final question.

Some of the most complex highway, bridge, and transit construction and maintenance projects are carried out in urban areas. FHWA estimates that maintenance and construction delays in the Nation's 50 largest cities account for $20 billion in wasted time and fuel. The conditions at these construction sites—many of which are already experiencing high volume of traffic—present challenges for highway departments in carrying them out with a minimum amount of disruption.

Would you describe the kinds of obstacles that are encountered in each situation and how these projects can be accelerated?

Mr. MCCORMICK. That is another good point in terms of life cycle cost. You should avoid that situation rather than have to cope with it. If you invest the money up front, you are going to be out there less time interrupting traffic flow, disrupting the economy, and also safety in construction zones both from a motorist's standpoint and from a construction worker's standpoint is obviously of concern.

So life cycle costing, more investment earlier to completely eliminate the problem—another good example is the freeway that was opened in California a week ago. It was opened 40 days early. It saved $1 million a day in user cost. The contractor got a $15 million bonus, but the users of the system got it 40 days early, so it was like a $40 million savings to the users of the system. That is a good point, Mr. Chairman.

Mr. DESJARDINS. Mr. Chairman, we construct a number of projects in urban areas. I will use an example of one we are doing here in the District, the Case Bridge.

One way to minimize inconvenience to the travelling public is to award these kinds of projects sooner. The Case Bridge took 10 months from the time we bid the project until we had a notice to proceed to move forward with it. Timely decisions on the part of the highway agency very often delay these kind of projects. The contractor is waiting for decisions to be made.

I think as we saw in California, prudent use of incentive/disincentive clauses would certainly help expedite construction. Partnering and value engineering would certainly help. But owners have to be receptive to value engineering proposals. We submitted

one here on the Case Bridge that would have saved 4 weeks on the construction time and it was turned down only because there was no cost saving associated with it. It was strictly a time saver. These are a few ideas that I think would help.

Mr. BORSKI. Gentlemen, let me thank you for your patience and for your testimony. It is very helpful.

The subcommittee hearing is adjourned.

[Whereupon, at 2:00 p.m., the subcommittee was adjourned, to reconvene subject to the call of the Chair.]

PREPARED STATEMENTS SUBMITTED
BY WITNESSES

BEFORE THE

**UNITED STATES HOUSE OF REPRESENTATIVES
INVESTIGATIONS AND OVERSIGHT SUBCOMMITTEE OF THE
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION**

April 21, 1994
Washington, DC

Statement of the

AMERICAN TRUCKING ASSOCIATIONS, INC.

On

CONDITION OF THE NATION'S HIGHWAY INFRASTRUCTURE

Ray Chamberlain
Vice President, Freight Policy

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I. INTRODUCTION

A. ATA Represents the Trucking Industry

I am Ray Chamberlain, Vice President of Freight Policy for the American Trucking Associations (ATA), the national trade association of the trucking industry. I come to ATA after six years as Executive Director of the Colorado Department of Transportation, during which period I served as the president of the American Association of State Highway and Transportation Officials (AASHTO) and as chairman of the Transportation Research Board (TRB). The ATA federation includes over 4,100 carriers, affiliated associations in every state, and 11 conferences. Together, ATA represents every type and class of motor carrier in the country. Combined with ATA's direct membership, we are a federation of over 40,000 member companies.

Thank you for scheduling these hearings on the status of the nation's infrastructure. The passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, and the 1992 presidential election, together generated a renewed interest as well as a great deal of debate on our nation's physical infrastructure. It placed a particularly strong emphasis on transportation systems. National policies were advocated to better maintain, restore, rebuild, and re-invest in all transportation facilities. A major rationale for this hearing is to learn where we are regarding the quality and integrity of the system and what we need to do to preserve and enhance it.

This interest in "rebuilding" America can be considered a major step in the nation's goal to revitalize the economy. This is a jobs program with far reaching strategic returns. Representing a major component of our infrastructure, highways and bridges account for the largest modal share of our transportation investment - about $1 trillion of our total investment of $1.4 trillion. It is clear that the quality and value of this public good is too precious to neglect. Our quality of life as a nation depends on it.

B. The Trucking Industry Serves America

Trucking is the nation's largest freight transportation mode by many measures. The trucking industry employs 7.8 million people throughout the economy in jobs that relate to trucking activity - more than the separate populations of 42 of our 50 states. We have gross freight revenues equal to 5% of the Gross Domestic Product - some $300 billion in 1993. In the same year, trucks hauled over 77% of all manufactured goods and transported 43% of total tonnage shipped by all modes - *2.9 billion tons of freight.* And demand continues to grow.

Based on preliminary projections, we anticipate that by the year 2000 domestic freight tonnage will increase 30% The number of freight trucks (classes 6, 7 & 8) needed to haul this tonnage will climb 8.3%, and the travel miles required to deliver this freight will increase 31%. All of this will occur even if economic growth takes place at a conservative 2.8% per year.

Considering these figures, it seems apparent that we need to insure that there is a transportation system which will provide the ability to meet the increased demands safely, efficiently, and with environmental sensitivity. Without investment in the maintenance, preservation, and upgrading of this system, economic growth will be constrained. We will lose factories, jobs, and economic strength. In short, disregarding the responsibility we have to invest in infrastructure is the same as just relinquishing economic opportunity to our international competitors.

II. SYSTEM CHARACTERISTICS

A. ATA Seeks an Integrated and Well-maintained System

The trucking industry seeks a safe transportation system which promotes the efficient movement of goods and people. This efficiency promotes increased competitiveness as the nation captures the cost savings provided by enhanced productivity. This, in turn, translates into economic growth. Further, ATA believes that these objectives can be realized in an environmentally sound manner.

ISTEA recognized the importance of using and integrating all modes of transportation to achieve this efficiency, and rightly so. It calls for an efficient, and well-connected highway system linking all modes together to form a seamless transportation network that will "enhance the nation's economic competitiveness in an increasingly global economy." However, as reported to Congress by the Secretary of Transportation in his 1993 report, "The Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance", the goals of ISTEA may be in jeopardy:

> The current cost to eliminate existing "backlog" highway deficiencies and feasible capacity deficiencies on arterial and collectors as of December 31, 1991 is approximately **$212 billion**, $7 billion (or 3.4%) more than it would have cost to eliminate the backlog in 1989 (which underscores the consequences of ignoring the situation)... *This increase in backlog is a*

result of general system deterioration, primarily increased congestion, which in the 50 most populous urban areas, was estimated to *cost the economy over $39 billion* (including costs for delay and fuel consumption)... Backlog is defined as a highway or bridge condition that was deficient at the beginning of the analysis period.

The cost to eliminate existing backlog bridge deficiencies is about $78 billion, actually $13 billion less since 1989, reflecting increased bridge rehabilitation and replacement activity, and modification to bridge rating procedures.

As suggested above, the economic implications of system deterioration exact a high price on our nation's productivity. Additionally, this inadequate historical investment emphasizes the importance of early enactment of the proposed National Highway System (NHS). Not only is this a priority in light of the inadequate funds - it is also important because the NHS provides the connectivity between all modes and is, in effect, the foundation, or "backbone" of our national, multi-modal transportation system.

B. System Maintenance and Improvement Needs Vs. What We Spend

When speaking about transportation system performance, other than backlog costs, there are two other measures which help to illustrate the scope of the issue:

- *the cost to maintain* the system at current condition and performance levels, which means preserving the system in as good or as bad condition that may presently exist; and

- *the cost to improve* condition and performance levels, which means the cost to reduce or eliminate backlog deficiencies, as well as meeting accruing requirements.

Once again, according to the Secretary's January, 1993 report to Congress (the next report is due January 1995):

The average annual cost to improve 1991 highway and bridge conditions and performance through 2011 is $67.3 billion. This includes: (1) eliminating the backlog where feasible; (2) meeting most accruing deficiencies by improving conditions and performance to reasonable design standards; and (3) meeting (where feasible) additional highway and bridge

> infrastructure requirements for metropolitan expansion. Approximately $20.3 billion is required for improvements in the 33 most populated urbanized areas.
>
> The average annual cost to maintain 1991 highway and bridge conditions and performance is $51.6 billion through 2011, ranging from about $46.2 billion in 1992 to $57.8 billion in 2011. About $12.4 billion of the average annual estimate is required for improvements in the 33 most populous urban areas.

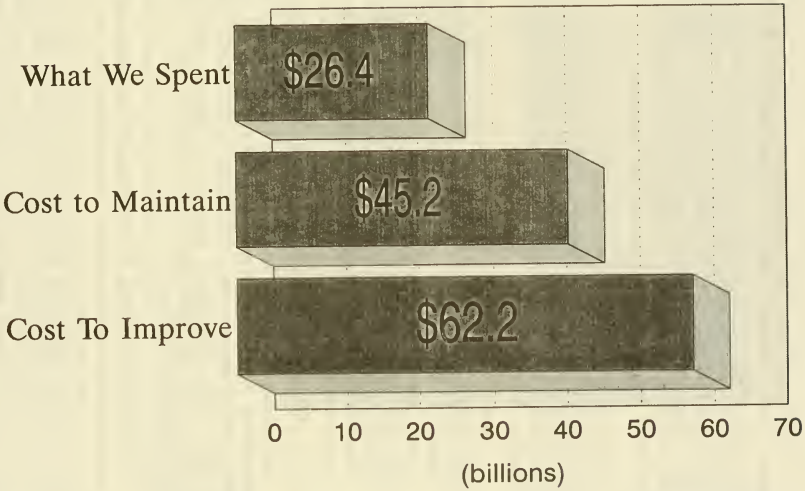
How does this relate to what we actually invest in our highway and bridge infrastructure? The DOT report provides the answer:

> In 1991, an estimated $26.4 billion was invested on arterials and collectors, equivalent to about 1.4 cents per 1991 vehicle mile of travel (VMT) on these facilities. By way of comparison, the **Cost to Improve** scenario for future requirements on highways and bridges is equivalent to about 3.3 cents per 1991 VMT. The **Cost to Maintain** is equivalent to about 2.4 cents per 1991 VMT.

To improve the system would have cost $62.2 billion in 1991. To just maintain the system we should have invested $45.2 billion in 1991. Total expenditure on highway infrastructure investments in 1991, however, was an estimated $26.4 billion. (see chart on next page)

1991 Infrastructure Investment

in Highways and Bridges



(source:USDOT)

C. Revenue Diversion - Do We Have Our Priorities In Order?

In view of the highway and bridge needs outlined above, and the huge gap between actual and needed investment, there can be little question of the need to fully fund ISTEA. We applaud the full Committee on Public Works and Transportation and the administration for recognizing the importance of infrastructure investment by providing a total program funding level of $20.1 billion for Fiscal Year 1995, compared to the ISTEA program total of $18.3 billion. Let us hope that these legislative commitments to infrastructure development are met by sound budgetary decisions. In other words, we should work to support actual obligating all that is authorized.

Even with such judicious funding goals, the reality of the situation is that every dollar that's available for infrastructure investment must be dedicated to just that; only enough revenue is available for top priority needs of the system. The relevance of this statement is underscored by the USDOT's own statement in its 1993 Conditions and Performance Report:

> Even under the assumptions of a significantly diminished rate of growth in travel demand of 1.4% per year, extremely aggressive systems management, including transit expansion and Intelligent Vehicle and Highway System (IVHS) application, and expansion of capital investment in both highways and transit, current and anticipated demand will tax the transportation system's capacity to provide the levels of mobility the public has come to expect.

Not every dollar collected from the highway user community is returned to the infrastructure it was originally supposedly meant to maintain and improve. These **Highway User Imposts** are all taxes, fees, charges and tolls levied on motor vehicles and their usage. They include motor fuel taxes on gasoline, diesel and other fuels, registration fees, operator's licenses, ton-mile motor carrier fees - in short, any charge targeted specifically to road users.

One distinct example of this is the 4.3 cents per gallon gasoline tax being assessed and currently diverted to deficit reduction. Other examples, relevant to ISTEA, include proposals for substantive changes to this landmark legislation which would divert an increased share of highway-user funds toward non-highway purposes. One is to suballocate National Highway System funds to cities at the potential expense of regional and interstate seamless connectivity. Another would mandate proportional obligations regardless of disproportional needs. In other words, if a region planned to spend a certain amount of funding on much-needed highway and bridge infrastructure

improvements, by law they would be mandated to expend a stipulated amount on another program, possibly the restoration of a historic railroad facility, whether or not it contributed directly to improving the region's transportation mobility or safety.

Deficit reduction is a commendable goal. So are scenic byways, historic preservation, and transit. But in light of what we've learned about the status of our highway and bridge infrastructure, and the importance of jobs and economic competitiveness, what are our priorities? *Preservation* of the transportation system must be high on the list.

If the Federal Highway Trust Fund and all highway user imposts are to be based on the user fee principle, then let's get the "trust" back into trust fund as soon as possible. Perhaps we could view this issue more casually if there were more adequate funding, but as the table on the previous page shows, there is not. ATA emphasizes the importance of stopping further diversion of monies in light of this need.

The trucking industry alone paid **$19.8 billion** in federal and state highway user taxes representing 34% of the total paid by all motor vehicles. It paid **$7.9 billion** in taxes to the Federal Highway Trust Fund, or 51% of the total paid by all motor vehicles.

These billions of dollars should be dedicated fully to the priority purpose of strategic investment in the nation's highway system, so as to slow down the current disinvestment.

III. THE BENEFITS OF INVESTMENTS IN INFRASTRUCTURE

A. Providing Jobs and Economic Vitality

Infrastructure investment plays a critical role in our economy. It allows us to work efficiently, making us more competitive in world trade. Since transportation contributes to a large share of the cost of goods we produce, the more efficiently our transportation network performs, the more productive we are, and the more competitive our economy will be.

"Just in time" (JIT) manufacturing systems have been credited as a key contributor to the improvement of American productivity over the past decade. Highly dependent on good transportation systems, manufacturers that use JIT programs cut carrying costs of inventory, use labor more productively, and provide more customized, "quick response" manufacturing. Many companies link their present and future success to the existence of a high-caliber transportation system, of which the NHS is the principal component.

Campbell Soup Company depends on a good network of arterial highways and interstates to achieve reliable JIT delivery of its food products and to support strategic alliances with its suppliers.

The Limited efficiently stocks a nationwide network of 4,425 retail clothing stores in 48 states from a centralized distribution center in Columbus, Ohio, almost entirely by use of reliable long-distance trucking.

Saturn Corporation competes successfully against foreign manufacturers of small cars by employing JIT manufacturing processes made possible by an effective, nationwide highway system.

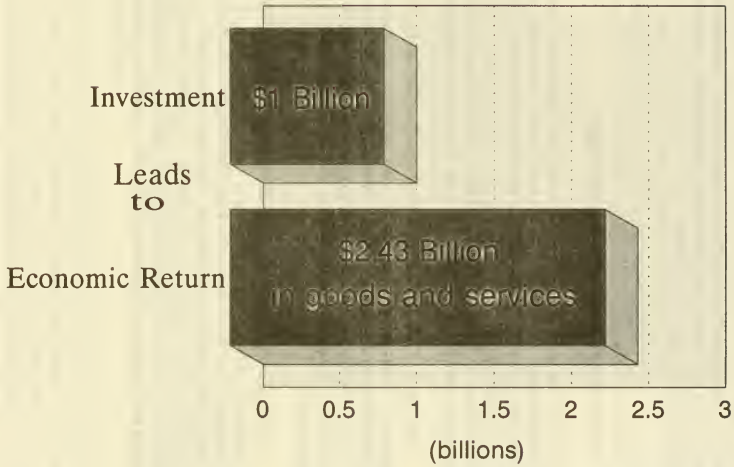
These and other examples come from a study performed by Apogee Research, Inc., of Bethesda, MD, titled, The Economic Importance of the National Highway System, With Case Study Examples. A copy of this study is provided to each member of the subcommittee.

When describing or talking about infrastructure programs, the lexicon often includes the term "investment", as in "infrastructure investments..." The key to the use of this expression is that when one invests, rather than "spends", a return of some sort is expected. In no other federal spending category is the relationship between government expenditures and growth in overall economic activity more quantitatively demonstrated than in transportation investment. This is capital investment - not government expenditure.

Every $1 billion dollars invested in our nation's highway infrastructure generates an estimated additional output of goods and services of about $2.43 billion. Of this, $1 billion pays for all the related costs of actual construction. The rest, an additional $1.43 billion, is the value of the additional growth in overall economic activity - those goods and services required to support the $1 billion investment. On average, for every 100 workers employed in the actual construction, another 128 jobs are created elsewhere in the economy (Highway Construction: Its Impact on the Economy: Congressional Research Service, The Library of Congress, #93-21E,1/6/93). (see chart on next page)

Infrastructure Investment

Benefits to the Economy



(source: CRS Report #93-21E)

The benefits described previously do not even take into account what might be called "third-order" effects which result from additional investment and consumption induced by highway and bridge spending. In other words, investing in our transportation system yields nearly immediate financial and job related benefits to the economy. *The result of having a good transportation system provides the long-term strategic asset the country needs to compete and win in the world economy, providing for good jobs and economic growth long into the future.*

B. Promoting International Competitiveness

In a world economy, today's economy, the competition American businesses face is no longer just down the street. It is to the South, to the North, and across the ocean. And so are supply and distribution lines. Businesses want shorter cycle times for deliveries while the supply lines are longer. These lines stretch all over the world and are intertwined and interdependent. Global logistics systems and programs are fast becoming the common tools needed to have a competitive transportation system.

It follows then that the nature of the demand placed on our transportation infrastructure is changing. For instance, the components necessary for the production of an automobile may originate from a half-dozen places around the country and the world. Yet the final product is still subject to international competition. Therefore, domestic transportation represents only a slice of a healthy nation's total transportation requirements.

Our system is increasingly being asked to serve America's global interests as well as its domestic ones. The two are bound together. Just think of the incentives behind the passage of the North American Free Trade Agreement (NAFTA) and other trade accords like the General Agreement on Tariffs and Trade (GATT). In sum, there has to be a suitable transportation system, including an information highway, for inbound raw materials and outbound finished products, both for consumption here and abroad. Delaying this investment is not an option. The world will not wait.

IV. CONCLUSION

We must do better in America in investing in and prioritizing our highway and bridge investment programs. As important and essential as we all know it is, highway and bridge infrastructure investment suffers from neglect; it is taken for granted perhaps because we have done many things right during the last forty years. The problem is that the matter is not a very captivating one; it does not produce the sense of crisis like education, health care and crime do. Contributing to this condition is that returns on infrastructure investment do not always come quickly. Much of the benefits develop over years and decades.

To give a good idea of the tremendous societal benefits to be gained from investing in such national assets, one only has to think of the Eisenhower Interstate System, and try to imagine where America, the economy, and our quality of life would be without it. A more contemporary example is the re-opening of the earthquake-damaged Santa Monica Freeway, described as the "aorta" of Los Angeles' circulatory system. For each day the freeway was closed, the region paid an estimated $1 million in extra commuting and delivery time costs. Thanks to ready funding and around the clock work, the nation's busiest freeway re-opened 74 days ahead of schedule, saving millions of dollars.

Infrastructure investments can only be delayed for so long until the costs come due. And these costs include:

* loss of productivity;
* increased cost of rebuilding with every passing year;
* increased cost of congestion; and,
* loss of market share, for every dollar we decide not to spend where it should be spent reduces our ability to compete in the international marketplace, which in turn reduces our ability to create good jobs for us and our children.

In summary, the failure to adequately invest in America's transportation infrastructure is a tax on the future economic growth, the productivity, and the international competitiveness of the nation. It is a wonder that we do not appreciate more the importance of maintaining and improving this $1 trillion public investment that is so vital to our prosperity and quality of life.

Thank you for the opportunity to testify.

Testimony Before
US House of Representatives
Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
on
Transportation and Environmental Infrastructure Needs
April 21, 1994
by

Anthony K. Chargin
Deputy Associate Director
Lawrence Livermore National Laboratory
PO Box 808, L-644
Livermore, CA 94550
(510)-422-5196
(510)-423-7914 FAX

Mr. Chairman and members of the Committee, thank you for conducting this review on transportation and environmental infrastructure needs. I am Anthony K. Chargin, Deputy Associate Director for the Energy, Manufacturing and Transportation Technologies Program (EMATT) at the Lawrence Livermore National Laboratory (LLNL).

In the first part of my testimony I will discuss broadly the taxpayers' R&D assets useful in solving the national transportation infrastructure problem. In the second part, I will address some of the specific issues that you have delineated.

Some of the most extensive investments in R&D capabilities that this country has are in the DOE national laboratory system. LLNL is a multiprogram laboratory that is operated by the University of California for DOE. Our Laboratory has nearly 7,500 employees, 40% of whom are engineers and scientists with the majority of these having advanced degrees. Another 40% are technical support staff, such as hardware and software technicians. LLNL has almost a billion dollar budget, half of which comes from DOE Defense Programs, and half of which comes from other parts of DOE, other federal agencies (such as DoD, NASA, NIH), as well as US Industry. Most recently we have been contributing technical solutions to the California Department of Transportation (Caltrans), and, relevant to this hearing, the US Department of Transportation.

My job in LLNL's Energy, Manufacturing and Transportation Technologies Program (EMATT) is to adapt existing technologies and to develop new ones to help solve national problems in the broad area of economic competitiveness. My program has a budget of $30M derived from over 80 projects of which half are Cooperative Research and Development Agreements (CRADAs) with US Industry.

A well-functioning infrastructure plays a crucial role in our nation's economic well being. It affects our manufacturing productivity as well as our quality of life. We at LLNL believe that we can contribute to the solution of the infrastructure problems. We are an R&D organization and believe that investment in R&D, aimed specifically at the infrastructure, would provide a cost benefit in the future.

Independent of the mode of transportation, our people require from the nation's infrastructure: increased throughput, higher reliability, and increased safety. In other words, people demand a continuous quality improvement effort just as they want from US Industry. Instead, the infrastructure is deteriorating as has been reported to you during previous hearings.

One possible measure of whether the quality of infrastructure is headed for improvement is the investment in R&D. In the business world, even in conventional technologies, an investment in R&D of 5% of gross sales appears necessary for continual success of a company, and in high technology industries the R&D investment is as much as 15% and more. In contrast, within the Department of Transportation, FTA is at 0.6%, FHWA is at 1.6%, FRA is at 2.5%, and FAA is at 3.6%, with percents expressed as a fraction of the total budget.

While many people suggest there is a need to spend more for capital improvements and operations, I would also like to add that there is room for spending more wisely. Investment in R&D should provide the guiding light for high payoff expenditures in the infrastructure. In the area of R&D, nontransportation government agencies have spent large sums of money in technical areas that are relevant to transportation. As an example, DOE spends $600M per year on materials research while DOT only spends $10M. There should be room for cooperation here. Because of this large DOE investment in materials, the aircraft and automotive manufacturers have sought to establish a number of CRADAs with LLNL. These CRADAs draw upon our experience, skills and laboratory equipment to study the industrial use of new materials such as fiber composites and other engineered materials. Are these materials useful in the refurbishing of the infrastructure? We can answer that question both from a functional and an economic point of

view. We are working closely with FHWA, Caltrans, FAA, and industry to understand their problems and to use our existing technologies to solve those problems.

In the area of increased throughput, we are working on projects in: software for advanced traffic management systems, standards for automatic vehicle identification and tagging, and an inexpensive collision avoidance radar (less than the cost of a headlight).

In the area of increased reliability, we are working on non-destructive inspection methods that would provide quantitative information about bridge and road conditions. These methods, developed for underground mine detection for DoD, involve the use of ground penetrating radar and dual-band infrared imaging. In addition to bridge deck inspection, these two technologies plus electrical resistance tomography, are applicable to quantifying highway sub-base moisture penetration, a project about to be funded by Caltrans.

In the area of improved safety, we are using computer codes, developed for defense technologies, to model crash situations that include the complete interaction of barriers, sign posts, vehicles, passive restraint systems, and passenger bodies. This code, DYNA3D, forms the basis for crash analysis world-wide. Through its use, this code provides opportunity for major cost savings by eliminating the need for many expensive crash tests. Currently it is available to government agencies and industry while our job is to continue improving its accuracy to model actual events. As a member of the CALSTART Consortium we are developing computational methods to model advanced aluminum car frame structures. These techniques will enable the industry to evaluate novel schemes for improved safety in electric or hybrid vehicles.

Although these projects have produced significant results, they were executed in a piecemeal fashion. What is needed is a complete system-wide view of the problem. For example, while our work in crashworthiness analysis considers all effects of the crash, it still leaves out the means of preventing the crash from occurring. The crash prevention problem is part of the Intelligent Vehicle Highway Systems (IVHS) program. In a multiskilled organization like ours, those problems could be considered together. The complete systems-wide analysis could lead to dramatic improvements in vehicle safety in a cost effective manner.

To optimize the use of its scarce research dollars, the current FHWA practice is to contract out the solution for solving small individual problems. For example, LLNL will have two separate contracts with FHWA to develop two different methods for bridge deck inspection. Two other R&D organizations will each have a contract for developing two additional methods. While we are able

to address all four inspection techniques (ground penetrating radar, dual-band infrared imaging, acoustic emission sensors, and fatigue loading indicators), as it now stands, none of the involved R&D organizations can take a systematic global view of bridge inspection. Due to variations in design, construction and materials, bridge inspection is a complex matter; no single method is likely to be useful for all applications. Perhaps the best solution is to develop an inspection vehicle carrying instruments utilizing several different inspection technologies. Through computer software, the results of each of the technologies can be fused into an optimum single diagnosis. In contrast, today's knowledge of bridge conditions is based almost entirely on visual indications of deterioration.

While replacement is an obvious solution to the nation's infrastructure problems, the simple rules of economics dictate the need to evaluate the existing and damaged structures nondestructively for the 'state-of-their-health'. With these data, an assessment of residual life can be made and strategies for repair or retrofit can be developed. (For example, after the Loma Prieta and Northridge earthquakes we offered our computational and nondestructive evaluation capabilities to help with the retrofits and we are providing Caltrans with the results of our calculations and inspection data).

Based on our experience, we recommend that Congress provide FHWA with the means to establish a National Center for Bridge Inspection and Monitoring (NCBIM). This Center would define program goals and plan, direct, coordinate, and demonstrate the various technologies developed. NCBIM would also sponsor R&D activities with industry and universities, maintain liaison functions with equipment manufacturers and service vendors to facilitate field demonstrations of new technologies. Based on our technical capabilities, people, facilities and current projects in the transportation area, LLNL would be happy to be the host laboratory for NCBIM under FHWA's direction.

We have also been active in proposing a partnership between LLNL, state and federal government agencies for the purpose of establishing the Advanced Transportation Technology Assistance Center (ATTAC). This center would provide public access to LLNL technical resources aimed mainly at small and medium sized companies. For example, many small companies are providing innovative ideas for IVHS. Another example would be working with roadway construction companies to develop advanced asphalt additives. Often these companies need technical assistance in prototyping, testing and evaluating their ideas. The California State Legislature is now considering an appropriation to create this Center. Additional Federal and state government participation would make the technology available on a national basis.

This fiscal year Congress terminated research in shale oil recovery and at the same time industry is trying to raise capital to build a shale oil plant for the production of an additive for asphalt. The additive is currently in testing through a number of road strips in the country and initial results show tremendous potential for increasing road life. As an asphalt additive, the shale oil value is several times that of its value as a fuel. The technical experience that LLNL chemists have acquired in developing shale oil as a fuel can be directly applied to the fundamental chemistry of asphalt additives of all types, not just shale oil.

The automotive industry has realized the benefit of drawing on the resources of several government R&D agencies. Together with the Big Three auto makers, President Clinton has started The Partnership for the New Generation Vehicle (PNGV) that combines the collective R&D skills of several government agencies toward the goal of a fuel-efficient, low-polluting, and affordable car. LLNL is an active participant in this partnership. The partnership has attracted the best that the country has to offer from government agencies to private and public research agencies, and ultimately the automotive industry. The adversarial relationships among these participants is ending and a new spirit of cooperation is on the horizon.

Let me suggest that the same is possible in the infrastructure field. At a previous hearing, Chairman Borsky said that infrastructure is not glamorous. I believe it is possible to change that perception. Following Buckminster Fuller's statement: "On spaceship earth there are no passengers, we're all crew", we all must worry how to improve life on this planet by optimizing the use of its resources.

Just as applications of science and technology has led us to develop medical diagnostic tools from stethoscopes to Magnetic Resonance Imaging (MRI), we can apply the already discovered science to quantitatively determine the remaining life-span of our bridges and roadways and apply the newly gained knowledge to the design of new infrastructure. Just as in PNGV, let us set up a partnership of government agencies, their laboratories, and industry which will improve the nation's infrastructure and thus become a point of national pride. However, unlike PNGV where industry is the end user and therefore the leader in the program, the infrastructure is owned and operated by government agencies; therefore, it is imperative that the government take the lead in marshaling all of its resources to solve this crucial problem of the nation's infrastructure. With the clear statement of vision from the government leaders such as yourselves, this can become a glamorous field to attract the best and the brightest people that the country has. I and many of my coworkers at LLNL already believe it.

RESPONSE TO ISSUES RAISED BY THE COMMITTEE

Assess the nation's current and future highway, bridge and transit infrastructure needs, the research and development needs, the funding sources, and what priorities you would propose for meeting those needs.

DOT produces the needs list through its Highway Performance Monitoring System, National Bridge Inventory, Rail Modernization Study, and National Plan of Integrated Airport Systems. Considering the budget shortages, it does not appear likely that all the defined needs can be satisfied soon. Rather than establish priorities through inconclusive data and intuitive reasoning, we propose investing in development of tools that would quantify, for example, the remaining useful life in bridges, roadways, etc. Existing technologies and R&D capabilities can be readily adapted to transportation needs. On the basis of quantified data and using probabilistic risk assessment methodology, priorities could be established in an equitable way.

Such an approach has been started in the aircraft industry. LLNL participates in the aging aircraft program with FAA and USAF in the development of the dual-band infrared technique for the nondestructive evaluation of aircraft structures. This techniques allows the monitoring of aging aircraft for corrosion damage and mechanically induced flaws.

Delineate how the federal government can facilitate highway, bridge and transit infrastructure improvements, for example through legislation, standard setting, innovative financing and tax policies, and coordinating regional solutions.

Provide federal support for developing technical solutions to highway, bridge and transit infrastructure problems. This means not just providing the financial support, but also the improved procedural means with which to use the intellectual capability and facility resources of the national laboratories and to make them available to state and local agencies and industries.

Encourage the use of the evolving electronic communication networks to join various transportation organizations to form effective working units while maintaining their corporate or agency identity. As an example, LLNL has proposed to Caltrans the establish of an electronic network to connect all institutions conducting transportation research within the state. The design could be extended easily across the country to electronically link all transportation related industries and agencies. The benefits would be the sharing of complex technical information,

improved analysis tools, and improved future designs. This could be an early application for the National Information Superhighway for the overall public good and not just for the benefit of the video and shopping network industries.

When the infrastructure fails to live up to public expectation, only the users suffer direct financial hardship. The constructors suffer not at all and the operators only indirectly. There is no obvious short-term financial reward or pain for either party. When the rewards are clear, great things can be achieved, i.e., the early completion of the retrofit of the Santa Monica freeway after the Northridge earthquake. Through contracting methods and the setting of new standards, the government should encourage more consideration of full life-cycle costs of infrastructure systems and evaluate its impact on productivity and quality of life. It will be possible to establish with R&D developments and data, the life expectancy and operational features of the infrastructure systems of the future. The state and local agencies and the private sector would be able to find optimal solutions within those performance constraints. We propose systems analysis which includes life-cycle cost impacts to form the basis for the new designs.

Outline the roles of the state, local, and private sector resources in dealing with the revitalization of our nation's highway, bridge and transit infrastructure.

This statement does not acknowledge the resources available at national laboratories such as LLNL. They should be considered. Today's practices within federal agencies in effect discourage the use of federal laboratories by nonsponsoring agencies. We receive complaints from DOT agencies as to how difficult it is to use a DOE laboratory. However, the existing FARs provide for the possibility of multiagency use of Federally Funded Research and Development Centers (Sec 35.017 (b)). There is a beginning. DOE and DOT have signed a Memorandum of Understanding that defines the working relationship for carrying out the IVHS program. Much more is possible in a mode of interagency partnership.

Discuss the pros and cons of European approach to building highway facilities, using greater investment on the front end to assure performance and longer useful life.

This sentence implies the obvious preferred approach. Greater initial investment in better technology assures lower life cycle cost. The US semiconductor industry is regaining its former share of the world market by having made a greater investment in technology and quality. The US auto makers have discovered the same thing. By analogy, the same should apply to the transportation infrastructure.

Discuss the importance of improved highway, bridge and transit infrastructure to the nation's urban centers.

Per FHWA analysis, in the 50 largest urban centers the cost of delay is over $39 billion per year. A possible solution for increasing throughput is a switch in the mode of transportation. FTA's budget for R&D is the smallest, in terms of percent and magnitude (0.6% and $24M respectively), of the four large DOT agencies. Therefore, it is easy to conclude why the consumers are not satisfied with much of the current public transit facilities. Wherever public transportation is adequate, consumers show a willingness to use it. The Advanced Transportation Technology Bus (ATTB) may provide an attractive alternative for urban transit. For zero emission urban transport, LLNL is developing a battery technology which the emerging electric bus companies find very attractive.

Testimony of
Robert J. Desjardins
of
The Associated General Contractors of America
Presented to the
Subcommittee on Investigations and Oversight
Committee on Public Works and Transportation
United States House of Representatives
April 21, 1994

On the Topic of
Highway and Bridge Needs

The Associated General Contractors of America (AGC) is a national trade association of more than 33,000 firms, including 8,000 of America's leading general contracting firms. They are engaged in the construction of the nation's commercial buildings, shopping centers, factories, warehouses, highways, bridges, tunnels, airports, water works facilities, waste treatment facilities, dams, water conservation projects, defense facilities, multi-family housing projects and site preparation/utilities installation for housing development.

The Associated General Contractors of America
1957 E Street N.W., Washington, D.C. 20006-5199, (202) 393-2040, Fax (202) 347-4004

KEY POINTS FROM AGC'S STATEMENT

- AGC believes the needs of the nation's highway and bridge infrastructure are well documented as is the link between transportation and economic competitiveness.

- AGC recommends Congress increase investment in the nation's highways and bridges to stimulate the economy and protect the Highway Trust Fund as the principle funding source for highway and bridge improvements.

- AGC recommends the federal government promote the use of Partnering and Value Engineering to better address highway and bridge improvements.

- AGC urges the federal government to take a critical step towards rebuilding the nation's infrastructure by enacting the National Highway System (NHS).

- AGC urges Congress to maintain a strong federal commitment to states for capital infrastructure programs.

- AGC encourages the Congress to make the necessary financial commitment to allow states to design highways for a longer useful life.

- AGC believes that highway and bridge improvements are critical to the economic health of the nation's urban centers.

- AGC urges Congress to remove the current sanctions and penalties affecting the highway program and carefully analyze the cost-effectiveness of mandates on the highway program.

Good morning, Mr. Chairman and members of the Subcommittee. My name is Robert Desjardins. I am a highway contractor from Pittsfield, Maine, and a past Chairman of the Highway Division of the Associated General Contractors of America (AGC).

AGC commends you, Mr. Chairman, for holding hearings on the nation's transportation and environmental infrastructure needs. AGC further commends this Subcommittee for dedicating a hearing to the critical needs of the nation's surface transportation system. AGC believes that highways and bridges are the backbone of the nation's surface transportation system.

Below are AGC's views on the issues identified in your April 7 letter of invitation to present testimony before the Subcommittee.

- **AGC believes the needs of the nation's highway and bridge infrastructure are well documented as is the link between transportation and economic competitiveness.**

On January 15, 1993, the U.S. Department of Transportation issued its biennial report to Congress on the condition and capital investment requirements for the Federal-aid highway, bridge and transit systems ["Status of the Nation's Highways, Bridges and Transit System: Conditions and Performance"].

DOT reports that: (a) Approximately 234,500 miles of U.S. highway are in "poor" or "mediocre" condition and need repair. The current cost to eliminate existing "backlog" highway pavement deficiencies and feasible capacity deficiencies is approximately $212 billion. (b) Approximately 118,500 U.S. bridges are "structurally deficient." The current cost to eliminate existing backlog bridge deficiencies is approximately $78 billion.

An efficient highway and bridge system is critical to improving the quality of life and economic growth. According to U.S. DOT research, highways in poor condition cost users as much as 25-30 percent more per mile than highways in good condition. And every 1 percent increase in highway user costs adds about $15 billion to the nation's total highway bill, including increased vehicle depreciation and maintenance, fuel, oil, and tire consumption.

The efficient movement of food, raw materials and manufactured products from place of origin to export facilities is key to America's competitiveness in the world marketplace. Road transportation accounts for 15 percent of U.S. Gross National Product and 84 percent of all U.S. spending on transportation. In 1990, trucks handled slightly more than 25 percent of all U.S. freight-ton miles -- up from 22 percent a decade earlier. Obviously, a very significant portion of the cost of U.S. goods is directly related to the cost of highway transport. With a land area of 3.6 million square miles, however, we face transportation challenges unique among the world's economically developed nations. For example, according to the U.S. Department of Transportation, the average freight trip by truck in the U.S. is almost 400 miles in length.

To improve U.S. competitiveness, investment in a high quality national highway and bridge network is essential.

- **AGC recommends Congress increase investment in the nation's highways and bridges to stimulate the economy and protect the Highway Trust Fund as the principle funding source for highway and bridge improvements.**

In terms of investment, the DOT reports: In 1991, total capital investment in highways and bridges by all levels of government was $36.1 billion. Just maintaining current highway and bridge conditions would require an average annual capital investment of $51.6 billion through 2011 -- $15.5 billion above the actual 1991 investment level. Actually improving current conditions and performance will require an average annual capital investment of $67.3 billion through 2011 -- $31.8 billion above the actual 1991 investment level.

The continued diversion of Highway Trust Fund revenue from highway and bridge projects exacerbates the ability of states to fund necessary improvements. Clearly, there are not enough available resources to meet the needs of all the eligible programs under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). As more non-highway interests take advantage of the flexibility provisions of ISTEA, it is evident that insufficient funds will be available to address neglected highway and bridge needs. Under ISTEA, more than $1 billion of Highway Trust Fund revenue has been expended on non-highway projects.

Americans continue to support the use of highway user fees as the primary funding source for highway and bridge improvements. Approximately 75 percent of the 1,000 people questioned in an April 1993 national poll said they found motor fuel taxes the fairest way to pay for highway repairs and improvements. In fact, nearly half of those questioned said they would favor an increase in motor fuel taxes if the money were used exclusively for highways and bridges.

- **AGC recommends the federal government promote the use of Partnering and Value Engineering to better address highway and bridge improvements.**

AGC continues to promote the use of Partnering and believes it has resulted in improvements to the construction process. While the contract establishes the legal relations, the Partnering process attempts to establish working relationships among the parties through a mutually-developed format strategy of commitment and communication. It attempts to create an environment where trust and teamwork prevent disputes, foster a cooperative bond to everyone's benefit, and facilitate the completion of a successful project.

The majority of state highway agencies have incorporated Partnering into the construction process.

Partnering also fosters the use of Value Engineering (VE) which saves money and enhances innovation and quality improvements. Last December, Secretary Peña sent to Congress a report entitled, "Value Engineering on Federal-aid Projects." The report found that the use of VE by state highway agencies is not widespread: 7 states have "active" VE programs; 18 states have "inactive" VE programs; and the remaining states have "limited" VE programs. An analysis of the VE programs in seven active states confirms that VE can

be an effective cost reduction tool. VE also presents the opportunity for enhancing innovation.

For VE to be successful, support for the VE process at all levels of management is needed. AGC supports FHWA's effort to encourage all states to establish a VE process.

- **AGC urges the federal government to take a critical step towards rebuilding the nation's infrastructure by enacting the National Highway System (NHS).**

Enactment of the NHS will help focus future federal highway funding on international and interstate routes, as well as on roads that serve major population centers, ports, airports, and international border crossings. While the NHS will include only 4 percent of the nation's existing highway mileage, it is the mileage that carries 40 percent of total vehicle-miles traveled in this country--including 80 percent of all tourist travel and 75 percent of all heavy truck travel.

Specifically, the NHS will include the 45,300-mile Interstate Highway System, existing major urban and rural arterials, the 1,500-mile defense strategic highway network, and strategic intermodal highway connectors. The NHS will reflect the major demographic and travel changes that have occurred in this country since the designation of the Interstate Highway System nearly 40 years ago.

Unfortunately, much of the NHS is in need of major repair or replacement. And that situation impedes U.S. competitiveness.

On just the 45,300-mile Interstate Highway System portion of the NHS, 10,500 miles are in either "poor" or "mediocre" condition, according to the U.S. Department of Transportation's 1993 report to Congress. An additional 7,300 miles are rated in only "fair" condition. The same report says that 13,725 bridges on the Interstate System -- 25 percent -- are deficient and in need of repair or replacement.

The U.S. Department of Transportation believes that an investment of $66.3 billion is needed to bring all bridges expected to be on the NHS back up to engineering standard. An additional investment of $145.4 billion, DOT says, is necessary to eliminate pavement deficiencies on the NHS over the next 15 years. Actually improving the capacity and performance of the NHS to meet traffic demand would cost considerably more.

- **AGC urges Congress to maintain a strong federal commitment to states for capital infrastructure programs.**

AGC is concerned with what could be called the "fragmentation" of the Federal-aid highway program. Major highway and bridge construction and improvement projects are expensive and require substantial resources. Under ISTEA, federal funds are being cut in so many ways that it will be increasingly difficult for states to build critically needed major projects.

Efforts to directly apportion Federal-aid highway funds to metropolitan planning organizations or urban centers are shortsighted. Efficient movement of goods and people demands a systems approach, not a fragmentation of decision-making and investment.

- **AGC encourages the Congress to make the necessary financial commitment to allow states to design highways for a longer useful life.**

There has been much recent attention given to comparisons between European and U.S. highways. In 1990, a European Asphalt Study Tour consisting of industry and public officials was convened. Two years later, a similar study tour was convened to examine European concrete highways. And just last year, a group of industry and government officials visited their European counterparts to discuss contract administration issues.

Significant contrasts in the highway systems exist between Europe and the U.S. in terms of demographics, highway factors (vehicle miles, vehicle density, highway density) and taxation efforts. The Federal-State partnership that has been essential to the success of the Federal-aid highway program in the U.S. has no counterpart in Europe. This partnership was created as a way to build and maintain the world's biggest system of 3.9 million miles of highways.

The most striking difference between the U.S. and European highways is fundamental -- Europeans are willing to invest more in the design and construction of their highways. In fact, their investment is three times greater than in the United States. Fuel costs about $3 to $5 per gallon; $2 to $4 of this cost is a tax. About 30 percent of the tax is for roads.

The U.S. has, and is in fact building, highways based on European design. Following the U.S. Tour of European Concrete in 1992, there was considerable interest in finding ways to incorporate key European features in American design and contracting practices. A July 1992 meeting between the Federal Highway Administration and the Michigan Department of Transportation resulted in the I-75 demonstration project, a 2.1 mile reconstruction in downtown Detroit. The European design is being used for approximately one mile of the project.

The stated advantages of the European designs are: longer and more reliable design service life; ability to carry higher axle loads, less reactive maintenance work to maintain service life and the use of more durable materials.

Before approving the project, Michigan DOT engineers estimated that the European pavement would cost 133 percent more than the standard Michigan design.

U.S. highway experts have the knowledge, the technology, and the equipment. What is lacking is sufficient revenue to make the European type investment to build highways with a longer useful life.

- **AGC believes that highway and bridge improvements are critical to the economic health of the nation's urban centers.**

Urban centers are critical to the health of the nation's economy. Highways and bridges serve as vital links to, and within, urban centers.

A recent example of the economic importance of a highway system to an urban center was demonstrated by the closure of the Santa Monica Freeway in Los Angeles. According to the Governor's Office of Planning and Research, the closure of the freeway was costing businesses $1 million a day.

Less than two hours after the January 17 Northridge earthquake, contractors were repairing water and gas lines. Demolition crews quickly mobilized to begin work on damaged highways and bridges. All levels of government worked cooperatively to better address the challenge of repairing the damage and restoring the region's economy.

- **AGC urges Congress to remove the current sanctions and penalties affecting the highway program and carefully analyze the cost-effectiveness of mandates on the highway program.**

Over the past several decades, the highway program has been used as leverage to force compliance with other federal mandates. From highway beautification to clean air, there are an increasing number of threats to withhold highway apportionments. Given the pressing need to adequately fund our nation's highway program, it is counterproductive, at best, to impose highway sanctions on states and jeopardize their ability to meet growing highway needs.

Let me specifically address two other concerns -- the proposed mandated use of ethanol and the mandated use of crumb rubber in asphalt pavement.

Mandated Ethanol Use -

All energy sources used to power motor vehicles driven on publicly-financed highways should be taxed by the federal government at a level at least equivalent to the gasoline tax. Subsidies for alternate motor fuels deny revenue to the Highway Trust Fund, thus limiting the government's ability to finance highway and bridge improvements. For example, the six cents-per-gallon tax exemption given on the sale of gasohol, a gasoline/alcohol blended fuel, has cost the Highway Trust Fund $4.5 billion since it was first initiated in 1974. Gasohol now has a seven percent share of the total passenger vehicle motor fuel market. To put the gasohol exemption loss to the trust fund in perspective, this amount of money could have resurfaced the equivalent of one lane of the entire Interstate Highway System! Congress also must realize that as the American automobile fleet becomes more fuel efficient, revenues to the trust fund decrease proportionately.

AGC opposes the EPA's proposal to mandate the use of ethanol. According to DOT, EPA's proposal would result in losses to the Highway Trust Fund of $340-$465 million per year. These annual losses would be in addition to current losses of Highway Trust Fund revenue of over $500 million per year because of the fuel tax exemption for ethanol-gasoline blend fuels. This erosion of revenue would significantly affect future highway program funding.

Crumb Rubber Asphalt -

AGC urges Congress to amend Section 1038 to allow flexibility in the minimum utilization requirements of crumb rubber in asphalt pavement. Due to the mixed results of crumb rubber pavement, Congress correctly placed a one year moratorium on imposition of penalties against states for failure to comply with Section 1038. AGC believes the minimum utilization requirements should be expanded to allow uses other than in hot mix asphalt pavement.

Section 1038 of ISTEA contains a provision which requires, among other things, that a certain percentage of hot mix asphalt tonnage purchased with Federal-aid funds contain crumb rubber from scrap tires. These minimum utilization requirements are that 5% of the Federal-aid hot mix asphalt tonnage in 1994, 10% in 1995, 15% in 1996 and 20% in 1997 contain crumb rubber.

A survey conducted by the American Association of State Highway and Transportation Officials identifies several concerns about crumb rubber modified hot mix asphalt including: increased cost of paving; concerns in some states about potential related health effects from using crumb rubber; and the availability of sufficient crumb rubber to satisfy the mandates of Section 1038. The survey indicates that the cost of full implementation of Section 1038 will be significant, about $1 billion in 1997 alone. In addition, the potential for recycling has not been demonstrated.

Scrap tires are a significant waste management problem in the U.S. The strategy to resolve this national problem should be to provide a range of options for states to enable them to explore more effective disposal and reuse alternatives than the use of scrap tires in asphalt pavement.

Mr. Chairman, the needs of the nation's highways and bridges are well documented as is the critical role they play in the nation's economy. Increasing the investment in highways and bridges is essential if this nation is to compete in the increasingly global marketplace.

American Association of
State Highway and
Transportation Officials

Howard Yerusalim, President
Secretary of the
Pennsylvania Department
of Transportation

Francis B. Francois
Executive Director

STATEMENT BEFORE THE

SUBCOMMITTEE ON INVESTIGATION AND OVERSIGHT

OF THE

HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

Relating to

THE NATION'S SURFACE TRANSPORTATION INFRASTRUCTURE NEEDS

By

FRANCIS B. FRANCOIS

Executive Director, American Association of State
Highway and Transportation Officials

April 21, 1994

Founded in 1914, AASHTO represents the departments concerned with transportation and highways in the fifty states, the District of Columbia and Puerto Rico, to foster the development, operation and maintenance of an integrated national transportation system. The active members of AASHTO are the duly constituted heads and other chief directing officials of the member transportation and highway agencies.

Executive Office: 444 N. Capitol St., N W., Suite 249, Washington O.C. 20001
Telephone (202) 624-5800 Telefax (202) 624-5806 Telex 4900009580 HTO

Working To Connect America

Mr. Chairman, I am Francis B. Francois, and I am the Executive Director of the American Association of State Highway and Transportation Officials, commonly known as AASHTO. On behalf of AASHTO, I am pleased to respond to your invitation to us to provide testimony at this hearing regarding the nation's surface transportation infrastructure needs.

In your letter of invitation, Mr. Chairman, you and the ranking minority member, Rep. Inhofe, identified nine subject areas of interest to the Subcommittee. This testimony is organized around those nine subject areas, which I will address in the same order as in your letter.

1. **Assess the nation's current and future highway, bridge and transit infrastructure needs, the funding sources, and what priorities would you propose for meeting those needs.**

A current basic source of information on the needs of the nation's highway, bridge and transit infrastructure needs is the January, 1993 report to Congress by the Secretary of Transportation, entitled The Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance. This Status Report addresses both our highway system (highways and bridges), and transit. The information on highways and bridges is largely based on data collected by the States and provided to the Federal Highway Administration, and AASHTO therefore has familiarity with the data and believes the Status Report provides a good assessment of the situation. As to transit, we believe that given the assumptions of the Status Report, its assessment of transit needs is sound as far as it goes. But we also believe that overall the transit needs in the Status Report are understated, as will be explained.

The Status Report also includes information on funding levels and sources for both the highway system and transit.

Transit

Mr. Chairman, the Status Report data on transit is based on 1990 data, and therefore is now somewhat dated. According to the Status Report, in 1990 the nation spent aome $19 billion on transit, of which $4.3 billion was for capital expenditures. Fares and other revenues collected from direct transit customers provided about 43 percent of operating costs, with State and local subsidies covering about 52 percent and Federal operating subsidies about 6 percent. Overall, the Federal share of total reported capital activity declined from 78 percent in 1980 to only 60 percent in 1990.

Looking at transit needs, the Status Report projects the required annualized investment in 1991 dollars without inflation, for two scenarios: (1) annualized cost to maintain conditions and performance, and (2) annualized cost to improve conditions and performance, in both cases including Metropolitan expansions. The assumptions used are described in the report. For the first scenario, the report estimates the annual requirement at $3.9 billion, and for the second scenario $6.6 billion.

According to the report, the $6.6 billion annual investment level of the second scenario would be adequate to:

- eliminate the backlog of bus and rail deficiencies;
- maintain current transit market share;
- add additional service to accommodate anticipated urban demand not included in the report's analysis of highway system needs;
- improve transit stations to current standards; and
- meet statutory requirements to serve disabled Americans.

There are other estimates of transit needs. For example, Chairman Norman Mineta of the Public Works and Transportation Committee stated on March 22 that:

> "The average age of transit buses now exceeds recommended usable age by 20 to 35 percent, and between 20 to 30 percent of rail transit facilities and maintenance yards are in poor condition. The price tag for repair: $18 billion."

The American Public Transit Association (APTA) has prepared needs estimates that are considerably beyond those contained in the Status Report, and individual transit agencies have done their own needs studies. For example, last October, AASHTO President Howard Yerusalim, who is Secretary of Transportation for the Commonwealth of Pennsylvania, reported to this Subcommittee that the Southeastern Pennsylvania Transportation Authority (SEPTA) has documented at least $4 billion in backlogged needs on its aging transit infrastructure, alone.

As part of its Transportation 2020 studies, as reported in our 1989 New Transportation Concepts for a New Century report, AASHTO projected transit capital funding requirements as follows:

Table 1: AASHTO Transit Capital Funding Needs (1989)

FY 1992	$3.5 billion
FY 1993	4.0 billion
FY 1994	4.5 billion
FY 1995	5.0 billion

In constant dollars, in order to just maintain the physical characteristics of the transit systems and sustain "most" of the current level of service, AASHTO projected in its 1989 report the need for an annual transit investment level of $15 billion.

In March, 1993, the General Accounting Office (GAO) released a report entitled Mass Transit: Needs Projections Could Better Reflect Future Costs, which provided a valuable comparison of the transit needs estimates of AASHTO, the Federal Transit Administration (FTA), and APTA. For AASHTO, it utilized information in a 1988 report that corresponds to that contained in the 1989 New Concepts report. The GAO took FTA information from a 1992 needs study, which corresponds to the transit data in the 1993 Status Report. The APTA

information came from APTA's 1990 needs study. The GAO study updated the estimates and put the information in comparable form, stated in constant 1991 billions of dollars. The following summarizes the GAO's findings.

Table 2. GAO 1993 Summary of Annual Transit Needs Reports
(billions - 1991 constant dollars)

Needs	FTA 1992	AASHTO 1988	APTA 1990
Maintenance/ Replacement	$3.9	$4.4	$6.5
Expansion	3.6	2.0	9.2
Subtotal Capital	7.5	6.4	15.7
Operating Expenses	NA	14.0	16.3
TOTAL	$7.5	$20.4	$32.0

The FTA did not project operating expenses, which helps explain the wide differences between its need estimates, and those of AASHTO and APTA. The AASHTO estimate, like the work of FTA, is focused on maintaining transit's current market share, and is somewhat higher that the 1990 transit funding level of $19 billion reported in the Status Report. The APTA funding levels are higher than AASHTO's, in part according to GAO because APTA's methodology did not limit respondents to an APTA survey to the current ratio of vehicles to facilities. Taken together, these three estimates provide a range of transit needs, based on current conditions.

Not included in the estimates of FTA, AASHTO and APTA are the added transit needs that would be generated if the market share of transit were to be sharply increased, as might occur during implementation of the Clean Air Act Amendments of 1990, or because the nation changes it pattern of urban development. Some increased capacity exists in some transit systems, but overall any significant shift in market share could greatly increase both required capital expenditures and operating expenses.

What is evident from the estimates of the Status Report, AASHTO and APTA is that the transit needs of the nation exceed available funding just to maintain current market shares. If we want a sharp increase in market share, there would be an accompanying large increase in needs.

Given that funding is inadequate, the question of priorities arises. A first priority for all transit properties should be to maintain current operating equipment and facilities, to the extent possible. The customers of our transit systems expect frequent, clean and reliable service, which is damaged when maintenance is inadequate. Aging vehicles should be maintained and replaced on an acceptable schedule, and tracks, stations and other facilities must be repaired when needed, if transit is to properly serve the American people.

Highways

The U.S. DOT Status Report includes considerable information about the condition of the nation's highways and bridges and current funding levels, and observes that in 1991 all levels of government (Federal, State and local) expended about $81.2 billion on our nation's 3.9 million miles of highways, roads and streets, of which $36.1 billion was expended for highway and bridge capital improvements. The comparable 1992 levels, taken from the Federal Highway Administration's (FHWA) report Highway Statistics 1992, are a total expenditure of $84.3 billion, and a capital expenditure of $38.7 billion.

In 1991, Federal funds accounted for 22.1 percent of the total $81.2 billion expenditure, State funds 50.8 percent, and local government funds 27.1 percent. Looking at capital improvements only, Federal funds accounted for 41 percent of the $36.1 billion expended.

Turning to the needs of our highway system, both highways and bridges, the findings of the Status Report are again summarized under two scenarios: (1) annualized cost to maintain conditions and performance, and (2) annualized cost to improve conditions and performance, in both cases including Metropolitan expansions. The following Table 3 summarizes annual needs over the 1992-2011 period, as found in the Status Report:

Table 3. U.S. DOT Projection of Annualized Highway System Needs
(billions of 1991 dollars, unadjusted for inflation)

System	Maintain Conditions and Performance	Improve Conditiona and Performance
Highway		
Rural		
Interstate	$3.2	$3.4
Other Arterials	5.8	7.6
Collectors	6.8	8.8
Subtotal Rural	$15.8	$19.8
Urban		
Interstate	$6.4	$7.5
Other Arterials	16.4	22.9
Collectors	3.8	4.8
Subtotal Urban	$26.6	$35.2
Local Total	$4.0	$4.0
TOTAL HIGHWAYS	$46.4	$59.0
Bridge		
TOTAL BRIDGES	$5.2	$8.2
TOTAL HIGHWAYS and BRIDGES	$51.6	$67.3

The needs summarized in Table 3 are regarded as conservative by AASHTO's member departments of highways and transportation, and by others who have examined highway and bridge needs. Returning again to Chairman Mineta's March 22 comments, for example, he stated:

> "Let's look at highways. Today we have 235,000 miles of Federal-aid highways that are in poor condition. The cost of repair: $212 billion. Bridges: we have 118,000 structurally deficient bridges. The cost of repair: $78 billion."

As is evident from comparing total capital expenditures for 1991 and 1992 with the total highway and bridge needs set forth in Table 3, the capital improvement needs of the nation's highways and bridges are not now being met. The 1992 total capital improvement expenditure level of $38.7 billion is $12.9 billion below the $51.6 billion needed just to maintain current conditions and performance.

The large current funding short-fall requires States and local governments to set priorities on which projects to move forward. As with transit, a first priority is to maintain our highways and bridges, although limited funding makes this difficult in some situations. Safety projects are another priority, as highway agencies work to reduce injury and fatal accidents related to highway and bridge conditions. Congestion relief and in some circumstances new capacity are also priorities. The priority decisions are difficult and many factors must be considered.

2. **Evaluate the adequacy of current funding levels to meet existing and future highway and transit program needs and the consequences of the failure to make necessary highway, bridge and transit infrastructure investments and improvements. Such consequences might include, for example, travel delays, increased costs due to deferred maintenance, and productivity losses.**

Mr. Chairman, as is clearly evident from the needs estimates given above, both our nation's highway system and our transit systems are now being funded substantially below needs.

For transit, this means that vehicles and other facilities are not always properly maintained, and that riders sometimes must face service interruptions and delays. These conditions act to turn people away from transit, at a time in our nation when we need to increase transit usage if we are to achieve congestion and mitigation goals. Inadequate funding also means that transit expansion to accommodate new riders and increase the market share of this important mode is simply not reality for many transit properties.

The Federal government's contributions to our nation's transit systems fell during the 1980s Under the ISTEA there is hope that this trend will be reversed, but even with full funding of the ISTEA Federal contribution would not return to former levels, when inflation is taken into account.

The States have been continually increasing their overall contributions toward transit, as AASHTO has documented in its annual Survey of State

Involvement in Public Transportation. Our 1992 report in this series, a copy of which is being filed with my testimony, documents a total State contribution to public transportation of just over $6 billion in 1992, considerably in excess of the total Federal contribution. But even with this growing State support, more funding is needed.

Turning to America's highway system, the truth is that we are slowly starving it to death. Each year, the engineering laws of nature are wearing out our highways and bridges at a faster pace then we can compensate for with our current funding levels. Under these conditions Americans can look forward to a highway system that will continue to deteriorate over time, as capital improvement investment levels prove inadequate to bring pavements, signs, appurtenances, and bridges up to the acceptable levels our customers want. Increasing traffic continues to place greater demands on our existing facilities, and creates the need to improve the system to reduce congestion and improve traffic flow. But funding shortages make such improvements difficult, if not impossible, to carry out.

In the face of inadequate funding to address all of our highway system needs, States and local governments must prioritize their available resources. Emergency situations, be they caused by floods, earthquakes, snow storms, or structural collapse, must first be addressed. Taking recovery from the snow and ice of the harsh 1993-94 winter as an example, some States and local governments were faced with actual costs that were twice or more what had been budgeted just to handle the snow and ice. Beyond this, snow and ice-caused damage to pavements and other facilities and structures was in excess of what was projected under their maintenance and construction budgets. Funds for snow removal, ice control and pavement and other facility repairs have been taken from the budgets of other planned activities and projects, which will be delayed until replacement funding is found.

After emergencies, the facilities that are most important to meeting the people and goods mobility needs of a State, metropolitan region or local government often have first call on available funding, which in turn delays other projects judged to be of less importance. For example, in some States over the past several years the need was recognized to improve the condition of the Eisenhower Interstate System, and these States focused funds on these vital pavements and bridges. The result is that overall, other arterials and collectors sometimes received less attention, which adversely affected the people and economic enterprises dependent upon them.

Mr. Chairman, we are pleased that the Subcommittee is interested in the "consequences" of inadequate funding for the nation's transportation infrastructure. As the question you have posed recognizes, underfunding does have "consequences," including travel delays, and increased costs for improvements when maintenance is delayed. With regard to such increased costs, it is known that if maintenance on pavements is delayed beyond a certain sharp downturn point that occurs near the end of their life, the costs for improvements can then be four to five times greater than if done earlier.

Inadequate highway conditions contribute to accidents, and to decreased productivity. When highway and transit systems in a metropolitan area are in

poor repair, that region's economy is directly affected, as are the everyday lives of the customers our transportation systems serve.

Inadequate funding of transportation is something every American should be concerned about. The old saw, "pay me now or pay me later," clearly applies to our transportation system. If we do not properly invest now, direct costs later will be higher. In the meantime, our customers will face increased costs from delays, productivity declines, accidents and equipment damage, and a general deterioration of their quality of life.

3. **Delineate how the Federal government can facilitate highway, bridge and transit infrastructure improvements, for example through legislation, standard setting, innovative financing and tax policies, and coordinating regional solutions.**

Aside from providing Federal funds, a major help that the Federal government can provide to States and local governments is to allow them as much flexibility as possible in the use of Federal dollars, and in the design and programming of projects. This flexibility makes it possible for State and local agencies to plan the most effective and efficient use of limited available funds.

Turning to the subject of standards, in some instances there is need to assure compatibility for technologies that are in common use across the nation. Two transportation examples would be our air traffic control system, and certain Intelligent Vehicle Highway System (IVHS) technology. In these areas the U.S. DOT plays a leadership role working with industry, groups like IVHS America and public agencies to develop mutually supported standards and protocols.

In other areas, such as the engineering and design standards for highway and bridges, the Federal role is more limited.

With respect to engineering and design standards on our highway system, it needs to be remembered that ours is a very diverse nation. No two of AASHTO's 52 member departments are alike in geography, soils or climate, and indeed in many States conditions vary sharply from one geographic region to another. As one example of how complex our nation is with respect to weather conditions alone, in order to implement the new SUPERPAVE asphalt performance specifications flowing out of the $50 million worth of asphalt research conducted under the Strategic Highway Research Program (SHRP), some 37 different temperature zones have been identified that influence the selection of the best asphalt binder grade, with these zones moving in a crazy-quilt pattern across the continent depending upon elevation, weather patterns and other factors.

In addition to weather, there are substantial variations in the age of highway facilities, the number of required bridges, environmental and other design concerns, and of course traffic conditions and vehicle mix, as you move from one part of a nation or State to another. Put simply, it is not practical to write "one size fits all" highway system standards at the Federal level, and expect good results in all States. As to local governments, there

are over 3,000 counties in the United States, and many thousands more municipalities, all often with differing conditions and needs. All of this calls for flexibility in approach.

To underline some of the concerns of our member departments about efforts to establish highway and bridge standards at the national level, when the AASHTO Board of Directors met on April 12-13, 1994 it adopted policy resolution PR-2-94, entitled National Highway System Design Standards, a copy of which is attached to my testimony. The "whereas" clauses cite some overall views of the States regarding design standards for the National Highway System, and hold that:

- the application of design standards for NHS components should be flexible, based on functional classification, type of traffic, and a wide variety of specific project circumstances.

- while safety is a paramount concern, environmental, scenic, historic, community and preservation concerns should also be integrated into design standards for the NHS, with State flexibility to incorporate such concerns.

- design solutions should be encouraged that respect the integrity and value of historic preservation, communities, rivers, streams, lakes, and coastal areas, wetland preservation, other environmental, scenic, and aesthetic considerations, and impacts on agricultural lands.

- design standards on NHS routes should seek to preserve and enhance access for bicycle and pedestrian traffic.

- each State is the appropriate judge of the balance among these factors.

Given these findings, the resolves of the AASHTO resolution state that:

- AASHTO is not in favor of any Federal requirement to establish a single standard for the NHS;

- AASHTO recommends that design standard determinations for NHS routes be delegated to each State, with the goal that each State's selected standards be in accordance with AASHTO design standards as appropriate; and

- the Member Departments of AASHTO will work through AASHTO's design standards committees, with DOT, and with interested parties on design criteria and a design process for NHS routes that integrate safety, environmental, scenic, historic, community and preservation concerns, and on standards which also foster access for bicycles and pedestrian traffic along with other transportation modes.

Moving from the NHS to lesser highways, roads and other facilities, these same concepts are relevant.

Over the years AASHTO's member departments have worked together through AASHTO, in cooperation with the Federal Highway Administration and often with other groups, to develop highway standards and guides where they believed them necessary. These standards and guides have extended to highway design, bridge design and several other design activities, and also to materials, where the AASHTO member departments working with the FHWA each year review materials standards. With respect to materials, AASHTO also works cooperatively with ASTM and other organizations. In all of our standards and policy work, we frequently draw upon research conducted through the AASHTO-sponsored National Cooperative Research Program (NCHRP), FHWA and other Federal research, research conducted by our member departments, and such special research projects as SHRP. The resultant standards, guides and policies are then utilized by Federal, State and local transportation agencies and their consultants, who use engineering judgment in their application. We believe this system has worked well.

We also believe that a proper and valuable contribution of the Federal government to standards, guides and policies is strong support for a sound research program, and in helping to establish national goals in key areas.

Turning to innovative financing and tax policies, we were pleased at the broadened support given to innovative financing in the ISTEA. We are now working with the FHWA and U.S. DOT to explore ways of utilizing these new tools, to use available Federal funds to leverage additional funding. As to tax policy, support of tax-exempt bonds for transportation projects is an important tool. We encourage flexibility in using Federal dollars with other public and private funding, and encouragement through incentives and other concepts for the public and private sectors to work closer together.

With respect to coordinating regional solutions, some of this of course occurs across the nation. Here in the nation's capital, our regional public transportation system is an outstanding example of what can happen when a plurality of State and local governments, in partnership with the Federal government, decide to work together. But regional solutions can be difficult because of the need often to work with a plurality of State laws, not to mention local governments with varying powers. Again, flexibility from the Federal level to establish cooperative mechanisms that can work to address transportation agencies is important. As with standards, there is no "one size fits all" regional approach that will work in all 50 States, and with all forms of local and regional governance.

One area where regional approaches are occurring is in the deployment of IVHS technology. On the multi-State level, two notable projects are the Advantage 75 effort on I-75 from Canada to Florida, and the I-95 Corridor Coalition. The initial goal of the Advantage 75 project is to facilitate motor carrier movements along the corridor, and six States, two Canadian Provinces, industry and the FHWA are involved. The I-95 Corridor Coalition extends from Maine to Virginia, and more than two dozen major State, local, and private transportation agencies, in addition to the FHWA, are working in a

partnership to improve the mobility, safety, environmental quality and efficiency of interregional travel along the corridor by using IVHS technologies.

Looking at regions within one State, there are several examples of effective regional cooperation using IVHS technologies. To discuss one region, the Houston Intelligent Transportation System (HITS) program is successfully implementing an array of IVHS technologies through a consortium that includes the Texas Department of Transportation, the Metropolitan Transit Authority of Harris County, the City of Houston and Harris County. Among its activities HITS includes a Traffic Management Center (TMC), a Motorist Assistance Program (MAP) and a planned 100 mile transitway system of which 63.6 miles are already in operation along five corridors. Working together the HITS partners are developing a Regional Computerized Traffic Signal System (RCTSS) that will modernize and control 2,800 traffic signals in the Houston area.

The FHWA and FTA are involved in supporting regional efforts such as these. Important to the success of such regional efforts is the ability to have flexibility in the use of Federal surface transportation funds.

4. **Outline the roles of State, local, and private sector resources in dealing with the revitalization of our nation's highway, bridge and transit infrastructure.**

As described earlier, State and local governments are the primary source of funding for America's 3.9 million miles of roads and highways, with the overall Federal share being about 21 percent, and the Federal share of capital expenditures being about 41 percent.

With respect to transit, as has also been described earlier, the farebox and subsidies from the States and local government provide the bulk of the funding, with Federal support now being substantially below State support. But the Federal role in transit capital programs remains important, and AASHTO also supports continued Federal operating assistance for transit.

There are a number of States that have turned to toll authorities created under State laws to finance both highways and bridges, and several new projects of this kind are either underway or are being planned. The recently opened Georgia 400 is one example of a new toll highway, one that in a few months is already meeting traffic expectations.

Under the provisions of Federal legislation, including the ISTEA and its predecessor Act, it is now possible to utilize Federal funds in connection with private funds to construct highway and bridge facilities. California has moved to initiate at least two projects under this legislation, and States like Washington have developed a public-private financing program. There are a number of issues that must be resolved to bring more public-private projects on line, and these issues are now under active review both at the FHWA and within AASHTO, under our recently established Task Force on Innovative Finance.

AASHTO has been looking at the sources of highway funding for several years, and in 1987 produced a report entitled Understanding the Highway Finance Evolution/Revolution. The report was based on a national conference we sponsored, and examined several sources of revenue for highways and bridges. Among the findings of the conference were the following:

- User fees have been and remain the most promising and among the most equitable sources of highway funding.

- Nontraditional funding sources are a supplement to, not a replacement for, traditional sources.

- Weight-distance taxation can be a useful third structure tax when shaping an equitable revenue base.

- Most nonuser fees are unstable; however, sales taxes pledged to specific transportation projects or programs offer potential revenues to States.

- It is reasonable to require developers to pay fees or make contributions such as donated right-of-way for highway improvements that would benefit them.

- In utilizing private participation for highway financing, highway agencies will be more likely to assume the position of facilitator rather than initiator.

More recently, AASHTO initiated NCHRP Project 20-24(7), entitled Alternatives to Motor Fuel Taxes for Financing Surface Transportation. This research was undertaken in light of:

- the emergence of ethanol and other alternate fuels that are taxed less compared to gasoline and diesel fuel;

- the greatly increased fuel efficiency of automobiles which creates sharp inequities in the user fee principle when some automobiles get several times the miles per gallon as other automobiles; and

- the need to raise significantly more revenue for our highway system. Currently, depending upon the State, fuel taxes provide about 50-60 percent of revenue, vehicle taxes from 20 to 25 percent, mileage taxes from 0 to 30 percent, and other taxes from 0 to 30 percent.

This NCHRP study is nearing completion, and a copy of a summary report presented in February to an AASHTO meeting is attached that examines some of the projected findings.

AASHTO and its member departments will continue to explore new revenue sources over the coming years, and it is expected that some new concepts or improved versions of old concepts will emerge.

Turning to transit, AASHTO's most recent Survey of State Involvement in Public Transportation found that in 1992 States collectively obtained transit funding from a wide variety of sources, including: State general fund; State transportation fund; sales tax; fuel tax; lottery proceeds; turnpike revenue; bonds; and other sources such as cigarette taxes and mineral royalties. Many local governments also used some of these same revenue sources, in addition to property tax income from the general fund. Clearly, legislators at both the State and local level are trying many different approaches, to meet what they perceive as their responsibilities in funding transit.

5. Discuss how steps can be taken to ensure that Federal capital assistance programs do not create perverse incentives, discouraging the use of State and local funds for maintenance activities, in anticipation of Federal funds for rehabilitation or replacement.

The increased flexibility allowed in the ISTEA for use of Surface Transportation Program funds should have eased this problem, if one did in fact exist.

When flexibility is not provided and the use of funding is confined to a specific system or category, then the results can be less than satisfying to observant citizens. For example, in the past there was sometimes a requirement that Federal funds be utilized to replace relatively sound guard rails on a specific Federal-aid system, while highways on other roads were unsafe and had no guardrail. One of the goals in the ISTEA was to end this type of problem, and we believe things are better than before.

Turning to transit, when funding for repair of buses is limited while grants for the purchase of new vehicles are available, the decision can be made to purchase new vehicles when for less cost the old vehicles could be restored and be made serviceable for many years. Giving transit properties the flexibility to make decisions on where dollars can be most effectively utilized would alleviate if not end this problem.

Finally, the ISTEA provisions allowing transfer of funding between highways and transit was a good step toward assuring that State and local agencies apply limited Federal funds where needed on these two modes. Thus far under the ISTEA around $1 billion has been transferred from highways to transit.

6. Discuss the pros and cons of the European approach to building highway facilities, using greater investment on the front end to assure better performance and longer useful life.

AASHTO, along with the FHWA, researchers and industry representatives, took part in two tours to examine European highways, an asphalt pavement tour in 1990, and a look at concrete highways in 1992. I had the privilege of taking part in both tours, and on both we observed quality motorways that were well constructed and maintained, and which are functioning to provide Europe with a transportation system for efficiently moving both automobiles and trucks, with the trucks being many in number and generally heavier than those operating on U.S. highways.

Reports were published on the results of both tours, and the following comments that sum up our findings are taken from the report of the 1992 tour, entitled Report on the 1992 U.S. Tour of European Concrete Highways. These findings are similar to those from our 1990 tour concentrated on asphalt highways.

- "We found that the new and recently build portland cement concrete highways we observed are constructed with a common philosophy -- worry more about design, materials and construction excellence and less about cost. These highways featured well-conceived, durable concrete slabs placed on thick, well-drained bases, resulting in superior pavement structures."

- "The European pavements we observed were built with the best technology available, much of which has been developed in the United States."

- "We found a cooperative attitude among the various components of the European highway community - researchers, government engineers, contractors, suppliers and others, and a commitment to excellence."

- "These nations are building their portland cement concrete highways for the future with a 30- to 40-year designed service life compared to our 20 years. Their highways carry a large volume of trucks, with allowable axle weights substantially above those in the United States."

- "We found a commitment to early, preventive maintenance in Europe, and to undertaking timely rehabilitation and reconstruction."

Several observations on these findings are important. First of all, the European nations we visited are for the most part utilizing technology developed in the United States. It is not their technology and equipment that are really different from ours, but other factors, especially the following three:

1. These European nations have made a commitment to bear the larger initial costs of constructing highways that have stronger bases, are thicker, and which are often better drained than our highways, with a planned life longer than ours.

   Our States and the Federal government could make the same commitment toward substantially greater increased costs and construction standards, but thus far we have opted not to do so. Without substantially increased funding, such a commitment would simply translate into significantly fewer miles of highways for our nation.

2. In Europe there is a high degree of cooperation between government and industry, where they work in partnership in research,

implementation of new processes and equipment, design of their pavements, and contracting administration.

In the United States, we have traditionally built a wall between our highway agencies and the contractors, with the agencies prescribing the product we want, and with low bid contracting being the only real link between the public and private sectors. Today we are beginning to put windows and doors in this wall, especially since our visits to Europe, and greater cooperation should result.

3. In Europe there is a strong commitment to early preventive maintenance on their motorways, with highways undergoing maintenance before any visual distress has developed. Adequate funding for earlier, more frequent maintenance work is made available.

   In the United States, we have traditionally relied on visual distress to schedule maintenance work, which means our maintenance work usually occurs later than in Europe. The new pavement and bridge management systems that are now being adopted should alleviate this situation. But there remains a shortage of available funding in the United States, which may prevent us from doing the same degree of preventive maintenance common in Europe.

Although it is difficult to obtain comparable information, our two tour groups were agreed that the American highway construction industry is considerably more efficient than what we observed in these European nations. And of course, overall our highway system is much more extensive than in Europe, and design in such areas as safety is better in the United States.

Do we have the same commitment to quality in the United States as we found in Europe? Separately as governments and contractors, the answer is probably "yes." The difference is in the closer working relationships found in Europe. Over the past few years our member departments, the FHWA and industry have been working hard to improve our private-public relationships, through such efforts as Partnering, and the National Quality Initiative that is bringing us closer together in all the States. In addition, AASHTO has adopted a specific commitment to quality, and has established a Standing Committee on Quality, with the charge of continually working to better meet the needs of our customers, the American people.

The key difference between Europe and the United States is the level of funding. With adequate funding we could duplicate or exceed the best of Europe's motorways, and given the higher efficiency of our American contractors we could do the job at much lower cost.

One concept that, if widely adopted and supported, could help move us closer to what is being done in Europe is life-cycle costing. In Europe, they look longer range than do we, and build roads that will carry traffic for 30 to 40 years, justifying the added expense by looking at costs over the entire period.

In the United States, the States, FHWA and our consultants are gaining experience with life cycle cost analysis (LCCA), and we recently held a conference on the subject. From a survey of our member departments, we found that about 30 States are using some form of LCCA, some of them for many years. This is occurring mostly at the project level on highways and bridges, especially to select the type of pavement. Most of the States include user costs in their LCCA, especially delay costs. Planned use of LCCA in the new pavement and bridge management systems is widespread among the States now active in LCCA.

LCCA can provide better decisions on the use of limited funding, but there are problem areas. There is not universal agreement on the number of years proper to include in the "life," and it is difficult to predict future interest rates in our economy. Nor is there agreement on the proper maintenance cycle between asphalt and concrete pavements, for example, and the associated costs. But progress is being made, and increased use of LCCA can be expected.

The bottom line remains funding, however. European nations simply are willing to spend more on their highways than we thus far have. Without a similar funding commitment, we cannot match the best of the European motorways.

7. Discuss the importance of improved highway, bridge and transit infrastructure to the nation's urban centers.

No urban center can survive and function without an adequate highway system, and in many cases an adequate transit system. This is self evident to many of us, and should be understood by every American.

In America, nearly all freight movements are by trucks over the highway. The facts therefore are that if you close down your highway system, then factories cannot receive materials, stores cannot receive goods, manufactured goods cannot move from the factory, and the delivery of services will essentially stop. People also would of course not be able to move about by motor vehicle, but then with everything else stopped, the need for such movements would be minimal. The urban economy would essentially cease to function.

Where rail transit exists, people might move without highways. But buses could also not operate, since they roll on rubber tires over streets and roads. But even the best transit system would do nothing to replace the role of trucks, by moving freight.

Highway, bridge and transit infrastructure is essential to our nation's urban areas, and the more efficient our transportation system, the better will be the economy of the urban area.

AASHTO recently initiated another NCHRP project, identified as NCHRP Project 20-7, Task 59, entitled "Transportation Investment and Economic Expansion: Case Studies." While the final report is not yet available, some of the materials are, including a table titled "Fundamental Linkages between

Transportation Investment and Economic Expansion," a copy of which is attached to this testimony. This table identifies the four economic factors of production and growth as land, labor, capital and productivity, and lists the transportation investment linkages to each factor. Several of these linkages are especially important in urban areas, such as that transportation will:

- Influence business locations.
- Increase the labor pool from which businesses select employees.
- Open up job opportunities for individuals.
- Reduce individual commuting time and cost, thereby increasing time and income for shopping and leisure.

This NCHRP research effort looks at all modes of transportation, including transit. With respect to transit, it finds that there are several ways in which transit investments can influence economic expansion in today's policy environment, by:

- Encouraging high density land development near stations and in the downtown core of a metropolitan area, by making these areas more attractive as business locations.
- Reducing highway congestion in the area and making possible job expansion and residential development in areas that otherwise could not support further development.
- Providing transportation to inner city residents helping them gain access to jobs.
- Increasing the locational advantage of suburban sites for clerical and labor intensive office operations.

Transportation is important to every American, regardless of where they live. If we are to improve America's urban areas, improving their transportation is a good place to begin, and must be part of any solution.

8. Comment on the potential effect of the Administration's budget proposal on highway and transit infrastructure.

If Congress is able to approve the nearly full funding of the ISTEA that the Administration's budget proposes, it would be important help for our highway and transit infrastructure. But given the needs for both highways and transit described earlier, there would still be a large unmet funding gap. State and local governments will try to close a portion of this gap, and public-private ventures and toll facilities may help in certain situations. But the reality is that our nation's transportation system would still be short of adequate funding.

On March 1, AASHTO President Howard Yerusalim testified before the Subcommittee on Surface Transportation, during which he provided AASHTO's

views on the highway and transit provisions of the Administration's budget. The following comments are excerpted from that testimony:

Highways

"The President's budget holds the promise of nearly full highway funding for FY 1995, but because this was achieved by a proposal to rescind current authorizations that we believe Congress will not accept, there is now a $400 million outlay funding problem in the Administration's highway program budget. We hope this gap can be closed, because full funding of the highway portion of the ISTEA is truly needed."

"Mr. Chairman, on the average the Federal contribution toward capital costs in our highway and bridge programs is about 41 percent, with the balance of the funding coming from State and local resources. Therefore, if the full $20.4 billion authorized for FY 1995 for highways was all applied to capital projects at the same 41 percent average Federal contribution level, full funding could result in a capital program of around $49.76 billion. This would begin to approach the requirements for a "cost to maintain" program, as identified in ... and the U.S. DOT report. But of course, not all of the authorized $20.4 billion is actually expended for capital projects, because of deductions for such things as the Transportation Enhancement Program, and any transfers of highway funding to transit."

"The point, Mr. Chairman, is that full-funding of the ISTEA is badly needed for America's highways. And even with full-funding, we will fall short of the requirements identified in the U.S. DOT report, which are generally regarded as conservative."

Transit

"Mr. Chairman, in transit we have also not achieved full funding, and indeed have fallen significantly short of the authorized levels. For FY 1995 the President proposes additional funding for capital projects, although not to authorized levels. But at the same time the budget also proposes a cut in transit operating assistance."

"We are concerned about the proposal in the Administration's FY 1995 budget submission to reduce transit operating assistance by $202 million or 25 percent. Continuation of Federal support for both capital and operating assistance is essential for maintenance of existing transit systems and an important element in expanding transit service, particularly in small urban and rural areas."

"Transit systems in small urban areas would be particularly hard hit by reductions in their operating budget, and would have to either increase fares or reduce staff and service. We do not think that increasing fares, which will likely reduce ridership, or reducing service is appropriate at a time when our national policy is stressing increased transit service."

"The States are working to meet the requirements of several major Federal legislative initiatives, including the Clean Air Act and the Americans with Disabilities Act, both of which contain policy directions to increase the use of public transit and expand its availability. Similarly, in the declaration of policy which opens the Intermodal Surface Transportation Efficiency Act (ISTEA), Congress calls for "...significant improvements in public transportation necessary to achieve national goals for improved air quality, energy conservation, international competitiveness, and mobility for elderly persons, persons with disabilities and economically disadvantaged persons in urban and rural areas of the country." "

"The States have not received additional Federal funding to meet these several added Federal requirements, and it seems inappropriate to reduce Federal funding to operate transit at a time when the States are making a good faith effort to meet the requirements of these major national initiatives."

9. **Discuss how so-called unfunded Federal mandates have affected State and local government infrastructure investment strategies.**

Mr. Chairman, AASHTO policy is to oppose Federal mandates and sanctions. Especially frustrating to our member departments are those mandates over which they have no jurisdiction and which result in sanctions when others do not meet the mandate, such as requirements that certain laws be enacted or Federal highway funds will be reduced. Other mandates do fall within the jurisdiction of our member departments, some of which are funded and some of which are not.

In enacting the Clean Air Amendments of 1990 Congress imposed a whole set of new planning and conformity requirements, but did not provide funding to State and local governments to carry them out. The Clean Water bills pending in both bodies at this time contain still further mandates for planning and other actions that will impact our member departments, but to our knowledge adequate funding for meeting these mandates is not intended. The impact on our transportation infrastructure under such mandates is that funding that might otherwise help meet our State, local and national transportation and mobility needs is instead utilized for other purposes. Given the documented overall shortages of transportation funding we now face, it hurts to see such diversions occur.

Some mandates have very laudable goals, but because they are unfunded they nevertheless impact on our ongoing transportation programs in major ways. A good example here would be the Americans with Disabilities Act. Its cost impact on our nation's transit systems is rather well known. Perhaps less known is that the Act also is imposing an array of new costs on highway, road and street projects, because of the need to modify curb cuts and make other changes when a new project is constructed, or when a project involves major reconstruction. According to AASHTO President Howard Yerusalim, in his Commonwealth of Pennsylvania alone, the impact of the curb cut provisions of the ADA on his program is in the range of $100 million.

In other instances Congress has enacted mandates directly on the transportation program, accompanied by a sanction if the mandate is not made. A current typical example is Section 1038(d) of the ISTEA, which mandates that States utilize a specific percentage of crumb rubber from waste tires in their asphalt pavements, or face a cut in Federal highway funding. The funding cuts under the sanctions are substantial, reaching 20 percent. And no credit is given under Section 1038 as it now stands for achieving 19.9 percent - it's the full 20 percent, or the 20 percent sanction applies.

Section 1038 is especially disturbing to our member departments, since the technology for doing what is mandated simply is not yet widely available. Three States, Arizona, California and Florida, have had some experience with crumb rubber modified hot mix asphalt (CRM HMA), but even they have concerns about the mandate. Other States have tried to build projects, but with no success. It is regrettable that such a specific engineering mandate was enacted into law before the technology exists, and without first having firm knowledge about the environmental and recycling impacts attached to what was mandated.

How do mandates affect State and local government infrastructure investment strategies? It depends on the State and local governments, and how the mandates impact. In some instances, it may be more efficient to accept the sanction accompanying a mandate. This is under consideration now, for example, in some States with respect to Section 1038. The facts documented from actual bidding in several States is that CRM HMA is from 20 percent to perhaps 100 percent more costly than conventional asphalt. Some believe that under such circumstances, accepting a 20 percent sanction may in the end be less costly than complying with the mandate.

If the CRM HMA mandate is implemented under these increased costs, then in all probability less miles of highway will result. Where a new road is being constructed, the CRM HMA cost is a small part of the overall costs and may have small impact. But for a resurfacing project, where the CRM HMA is the major component of project cost and the cost of the CRM HMA is for example double conventional asphalt, it may be that complying with the mandate means that one-half the miles can be resurfaced. It is very difficult to explain this to our citizens and voters, and therefore another problem with mandates like this one is that there is an increase in the public's frustration and anger with the Federal government.

Another impact of mandates is that they may sometimes result in unintended decisions, made to avoid the mandate and obtain more transportation results for the dollars invested. For example, returning to the CRM HMA situation under Section 1038, some agencies are now discussing the possibility of shifting from asphalt pavements to portland cement concrete pavements to avoid the mandate problem. Where life cycle cost analysis is close, the increased cost of the CRM HMA may move the final decision toward portland cement concrete for certain, if not all, projects. Such a shift would impact in several areas, and would take time to accomplish; but this example demonstrates how mandates can impact programmatic decisions.

Returning to a theme that has run through my testimony, Mr. Chairman, the way to obtain the most effective and efficient use of Federal transportation dollars is to provide the maximum of flexibility in keeping with the need for Federal stewardship over Federally-raised tax dollars, and to rely on engineering judgments made in accordance with accepted practices, policies and standards. Mandates often disrupt otherwise effective processes, especially when the mandate is not accompanied by off-setting Federal funds.

Conclusion

Mr. Chairman and members of the Subcommittee, this concludes my prepared testimony. I will be pleased to respond to questions, either now or in writing later. As always, AASHTO stands ready to provide whatever assistance to the Subcommittee that we can.

# # # #

As approved by the AASHTO Board
of Directors on April 11, 1994

POLICY RESOLUTION PR-2-94

TITLE: NATIONAL HIGHWAY SYSTEM DESIGN STANDARDS

WHEREAS, AASHTO supports the National Highway System (NHS), which is comprised of a cross-section of rural and urban roads in a wide variety of natural and cultural settings; and

WHEREAS, the application of Interstate design standards across all NHS routes or the application of a design standard higher than warranted by the type of traffic using the particular NHS route would be inappropriate and counterproductive; and

WHEREAS, the application of design standards for NHS components should be flexible, based on functional classification, type of traffic, and a wide variety of specific project circumstances; and

WHEREAS, while safety is a paramount concern, environmental, scenic, historic, community and preservation concerns should also be integrated into design standards for the NHS, with State flexibility to incorporate such concerns; and

WHEREAS, design solutions should be encouraged that respect the integrity and value of historic preservation, communities, rivers, streams, lakes, and coastal areas, wetland preservation, other environmental, scenic, and aesthetic considerations, and impacts on agricultural lands; and

WHEREAS, design standards on NHS routes should seek to preserve and enhance access for bicycle and pedestrian traffic;

WHEREAS, each state is the appropriate judge of the balance among these factors.

NOW, THEREFORE, BE IT RESOLVED, that the Board of Directors of the American Association of State Highway and Transportation Officials (AASHTO) is not in favor of any Federal requirement to establish a single standard for the NHS.

BE IT FURTHER RESOLVED, that AASHTO recommends that design standard determinations for NHS routes be delegated to each State, with the goal that each State's selected standards be in accordance with AASHTO design standards as appropriate,

BE IT FURTHER RESOLVED, that the Member Departments of AASHTO will work through AASHTO's design standards committees, with DOT, and with interested parties on design criteria and a design process for NHS routes that integrate safety, environmental, scenic, historic, community and preservation concerns, and on standards which also foster access for bicycles and pedestrian traffic along with other transportation modes.

Table III:
Fundamental Linkages between Transportation Investment and Economic Expansion

ECONOMIC FACTORS OF PRODUCTION AND GROWTH	TRANSPORTATION INVESTMENT LINKAGES
LAND	• Without access, developable land and natural resources remain unproductive • Opens up developable land and natural resources • Influences individual residential locations • Influences business locations • Increases market reach of an area's production and services
LABOR	• Short term job creation • Long term employment increase due to increased economic competitiveness • Increase labor pool, from which businesses select employees • Open up job opportunities for individuals • Reduce individual commuting time and cost, thereby increasing time and income for shopping and leisure
CAPITAL	• Build up production capacity and increase efficiency • Encourage non transportation private sector investment
PRODUCTIVITY	• Public sector • Private sector transportation industry • Private sector non transportation industry

AASHTO Forum - Seeking Revenue Alternatives to the Motor Fuel Tax

Dr. Joseph Stowers, President of Sydec, Inc., provided a report on the NCHRP project 20-24 (7) - Alternatives to Motor Fuel Taxes for Financing Surface Transportation Improvements, at the AASHTO Legislative Briefing last week.

Dr. Stowers said that the study had been authorized by the states because current revenue sources for maintaining the nation's transportation system "are inadequate to meet present and projected needs." He said the primary form of highway funding today, motor-fuel taxes, is not effective because it has not kept pace with inflation, and cars are more fuel efficient. In addition, alternatively-fueled cars would further diminish the effectiveness of motor fuel taxes in the future.

The purpose of the NCHRP project is to examine alternative methods to the traditional motor-fuel tax that can be used as a principal way to finance the surface transportation system. The following alternatives were to considered and evaluated:

- Current fuel taxes;
- Taxes on alternative fuels;
- Registration fees (or vehicle use taxes);
- Vehicle miles of travel fees;
- Vehicle and vehicle parts sales taxes;
- Pavement damage fees or weight-distance taxes;
- Congestion pricing; and
- Emissions fees.

According to Stowers, certain criteria were considered when examining these alternative financing sources as potential methods to finance the transportation system. The adequacy and efficiency of collecting funds were examined, as was funding equity among highway users. In addition, the costs of administering and enforcing the different programs were considered, along with the potential risk of evasion.

Stowers stated that research has indicated that improvements have been made with current fuel taxation. Among its benefits include a low compliance cost and low administrative costs or planning. The report also finds that

some alternative fuels can be taxed in the same way. It concludes that fuel taxation will remain a viable option in the future, but should be augmented by other transportation funding sources.

Taxes based on vehicle miles traveled were found to be the most equitable source of funding, according to Stowers. In addition, this source was has the most potential for offering major improvements in finance. Taxing vehicle miles was also found to be the only system in which major decisions were the responsibility of transportation officials.

However, implementing such a taxation system would be difficult, and the current technology to measure vehicle miles traveled was also in question. The optimal technological systems for measuring vehicle miles traveled are not yet known, and the report suggests that technologies should be developed to help operate this type of system. Stowers stated that this system should be phased-in rather than implemented immediately.

A report on Phase I of the project is complete, and an interim report is in the works. Phase II of the project is currently underway, and will focus on evaluating various financial schemes.

A copy of the slides used by Stowers at the briefing is attached.

NCHRP PROJECT 20-24(7)

ALTERNATIVES TO MOTOR FUEL TAXES FOR FINANCING SURFACE TRANSPORTATION

Cambridge Systematics, Inc.
Sydec, Inc.

February 1994

REVENUE CHALLENGES AND OPPORTUNITIES

Challenges:

- Electric or CNG vehicles
- Funding of substitute mobility under TDM & TCM
- Fuel efficiency

Opportunities:

- New sources
- New technologies

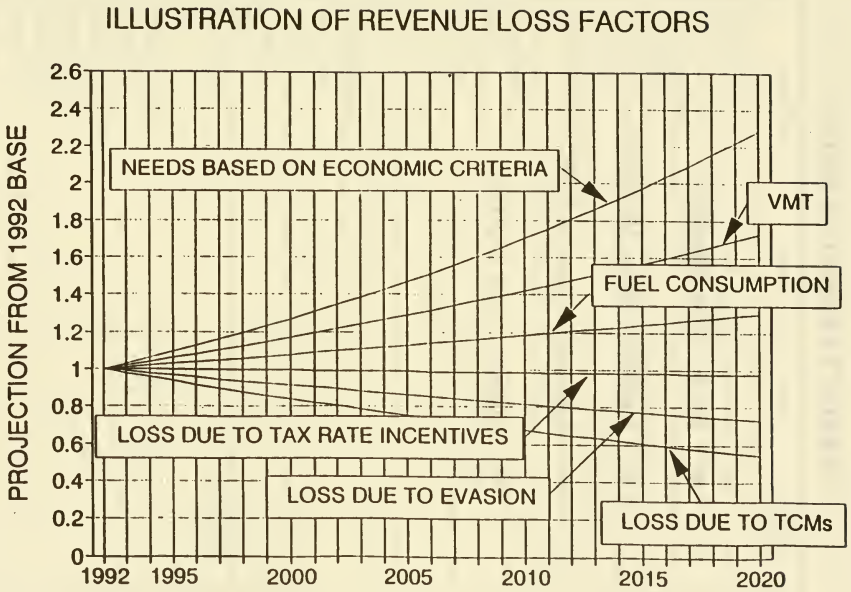


ILLUSTRATION OF REVENUE LOSS FACTORS
PROJECTION FROM 1992 BASE
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1992
1995
2000
2005
2010
2015
2020
NEEDS BASED ON ECONOMIC CRITERIA
VMT
FUEL CONSUMPTION
LOSS DUE TO TAX RATE INCENTIVES
LOSS DUE TO EVASION
LOSS DUE TO TCMs

BASIC TYPES OF TAXES

- Fuel - now 50-60%
- Vehicle - now 20-25%
- Mileage - now 0-30%
- Other - now 0-30%

POTENTIAL REVENUE SOURCES BY LEVEL OF GOVERNMENT

Type of Tax	Federal	State	Local or Regional
Registration/use	x	x	
- flat	x	x	
- horsepower based	x	x	
- weight based	x	x	
- value based (property)	x	x	x
Vehicle sales	x	x	x
Vehicle property (value)		x	x
Tires	x	x	
Fuel per gallon	x	x	x
Fuel use	x	x	
By fuel type			
- gasoline	x	x	x
- diesel	x	x	x
- LPG	x	x	x
- Methanol/ethanol	x	x	x
- Natural gas	x	x	x
- Gasohol	x	x	x
- Electric	x	x	x
VMT	x	x	x(regional)
Weight-distance	x	x	x(regional)
Tolls	x	x	x
Congestion pricing		x	x
Emissions fees		x	x
Carbon/Btu/ad valorem	x	x	
Pavement damage	x	x	
Other externality	x	x	x
Concessions		x	x
Impact fees		x	x
Value capture		x	x
Special assessments			x
General taxes	x	x	x
Debt financing		x	x
Private ownership		x	x
Transit fares		x	x

CRITERIA AND OTHER ISSUES

Adequacy

- Yield in Relation to Need, Uses, and Investment Requirements
- Responsiveness to Inflation

Equity

- Costs Occasioned
- Ability to Pay
- Equity by Geographic Area

Efficiency

- Better Decisions on Travel
- Paying Costs Imposed on Others

Simplicity

- Administrative Cost
- Compliance Cost
- Enforcement Cost
- Evasion

Additional Issues of Concern

- Public Understanding and Support
- User Charge Rationale
- Accountability
- Federalism

TAXPAYERS, POINT OF TAXATION, AND COMPLIANCE COST

Alternative Tax Sources	Number of Taxpayers	Point of Taxation	Compliance Cost per Year
Current Fuel Taxes -Gasoline -Diesel -Gasohol	Gasoline: few thousand for high up the distribution chain Diesel: several hundred thousand Gasohol: same as gasoline	Gasoline: refiner, if possible Diesel: trucker or distributor Gasohol: same as gasoline	Gasoline: nominal Diesel: over $10/account Gasohol: nominal
Alternative Fuel Taxes -Liquids -CNG -Electric	Number of vehicle owners	Liquids: refiner, if possible; otherwise, trucker or distributor CNG: same, or owner Electric: owner	Federal and State liquids: nominal Meters: $30 to $40/vehicle Federal CNG or electric: $5 to $7.50/vehicle each year State CNG: nominal to $35 to $51/vehicle first year; $5 to $11 later years (includes meters) State electric: $35 to $51/vehicle first year; $5 to $11 later
Vehicle Use Taxes (or Registration Fees)	National: about 100 million households and businesses	Vehicle owner/operator (household or business)	Federal Tax: $375 million to $750 million for 100 million taxpayers ($3.75 to $7.50/payer) State Tax: Nominal (already collected in all states)
VMT Fees	National: about 100 million households and businesses	Vehicle owner/operator	Meters: $30 to $40/vehicle; ($5.4 billion to $7.2 billion first year for 180 million vehicles; $600 million to $800 million in later years for 20 million/year) State: $167 to $500 million/year for filings Federal: $500 to $750 million/year for filings Total: $6.1 to $8.5 billion in first year, ($60 to $80/payer); $1.3 to $2.2 billion later ($13 to $22/payer)
New Vehicle and/or Parts Sales Taxes	New vehicles: nominal Parts: approximately 200,000	National: best at manufacturer level State: retail level	Manufacturer's: minimal for new vehicles Retail level: minimal for new vehicles Retail level: $400 million for parts and accessories
Pavement Damage Fees or Weight Distance Taxes	Same as number paying the current heavy vehicle use tax if applied only to vehicles over 55,000 pounds	Vehicle owner/operator	Federal: for vehicles over 55,000 pounds, net increase of $2.4 to $9.4 million if gross weight, $6.2 to $31.8 million if axle weights, compared to existing heavy vehicle use tax. State: average $5 to $10/account, based on carrier mix
Congestion Pricing	Number of vehicle owner/operators in places implementing congestion pricing	Vehicle owner/operator	National: $5.6 to $11.0 billion in first year, later $2.4 to $3.2 billion/year (for 180 million vehicles) State: proportional to number of vehicles
Emissions Fees	Number of vehicle owner/operators in places implementing emissions fees	Vehicle owner/operator	National: For emissions/use fee, costs would be $4.0 to $4.2 billion. For VMT/emissions fee, $9.5 to $11.6 billion initially, then $4.7 to $5.2 billion (for 180 million vehicles) State: proportional to vehicles

ADEQUACY ISSUES

Alternative Tax Sources	Consistency — New Approach/ Adequacy	Stability and Productivity	Responsiveness to Inflation	Responsiveness to VMT Growth	Flexibility	Appropriate to Dedicate Funds?
Current Fuel Taxes	Partially/ Yes	Medium	Non-responsive unless indexed for inflation	Partially	Yes	Yes
Taxes on Alternative Fuels	Partially/ Yes	Low	Non-responsive unless indexed for inflation	Partially	Yes	Yes
Registration Fees (or Vehicle Use Taxes)	Partially/ Yes	Medium	Non-responsive unless indexed for inflation	Partially	Yes	Yes
Vehicle Miles of Travel Fees (and Tolls)	Fully/ Yes	Medium	Non-responsive unless indexed for inflation	Yes	Yes	Yes
Vehicle Sales and/or Parts Tax	Partially/ Yes	Low	Very responsive to inflation	Partially	Yes	Yes
Pavement Damage Fees or Weight-Distance Taxes	Fully/ Yes	Medium	Non-responsive unless indexed for inflation	More than linear	Yes	Yes
Congestion Pricing	Fully/ Yes	Low	Non-responsive unless indexed for inflation	Partially	Yes	Yes
Emissions Fees	Partially/ Yes	Low	Non-responsive unless indexed for inflation	Partially if emissions only Fully if VMT/emissions	Yes	Less than other fees

FEDERAL COST RESPONSIBILITY AND RELATIVE REVENUE FOR ALTERNATIVE SOURCES

	Relative Revenue per Mile Compared to Autos if Based Upon:				Relative Annual Revenue Required
	Cost Responsibility	Fuel	Vehicle Sales	Vehicle Weight	
Auto	1.00	1.00	1.00	1.00	1.00
Motorcycle	0.35	0.46	1.17	1.20	0.08
Pickups and Vans	1.22	1.38	0.64	1.84	1.30
Buses	5.65	4.06	2.33	4.22	6.26
SU Under 26	2.57	3.56	1.21	5.64	2.75
SU Over 26	5.76	3.97	2.96	9.81	7.58
Comb Under 50	6.19	4.19	1.51	4.17	16.05
Comb 50 to 70	9.43	4.22	1.71	5.40	39.17
Comb 70 to 75	12.62	4.34	2.06	5.60	57.15
Comb Over 75	16.84	4.32	1.88	5.15	87.29
All Vehicles	1.57	1.31	0.96	1.53	1.59

SHARES THAT HOUSEHOLD INCOME QUINTILES WILL PAY OF $10 BILLION OF TAXES BY SOURCE

Quintile by Income	Fuel Tax	Vehicle Sales Tax	Vehicle Use Tax	VMT Tax
	(in billions of dollars)			
Bottom Quintile	$0.944	$0.622	$1.111	$0.922
Second Quintile	1.445	1.123	1.716	1.578
Third Quintile	2.027	1.821	2.060	2.043
Fourth Quintile	2.548	2.751	2.424	2.523
Highest Quintile	3.035	3.682	2.689	2.934
Total	$10.000	$10.000	$10.000	$10.000

ADMINISTRATIVE COSTS

Alternative Tax Sources	Federal Administrative Costs per Year	State Administrative Costs Per Year
Current Fuel Taxes		$200 million/year
Alternative Fuel Taxes -Liquid -CNG -Electric	 Nominal increase $2.00 to $2.50/vehicle $2.00 to $2.50/vehicle	 Nominal increase $2.00 to $2.50/vehicle $2.00 to $2.50/vehicle
Registration Fees (and Federal Vehicle Use Tax)	Federal: $150 to $217 million State cross-checks: $120 million Total: $270 to $337 million	$1.9 to $2.1 billion/year (already incurred); nominal marginal cost to change
Vehicle Miles of Travel Fees	Federal: $150 to $217 million State: $240 million Total: $390 to $457 million	State only (no federal): $290 million
Vehicle Sales and/or Parts Tax	New vehicles: very small Retail parts: $200 million	New Vehicles: very small Retail Parts: $200 million
Pavement Damage Fees or Weight-Distance Taxes	Vehicles over 26,000 pounds: $26 to $114 million Vehicles over 55,000 pounds: $12 to $53 million	Estimated $30 to $150/account, and 10,000 to 80,000 accounts/state: $0.3 million to $12 million
Congestion Pricing	Not applicable	At least $20 to $50/vehicle
Emissions Fees	Not applicable	Emissions only: $9/vehicle VMT also: $30 to $60/vehicle

SUMMARY COMPARISON OF CURRRENT FUEL TAXES AND VMT FEES

Criterion	Current Fuel Taxes	VMT Fees	Differences
Adequacy and Tax Rate	Adequate - yes Tax rate - flexible	Adequate - yes Tax rate - flexible	No difference
Stability and Predictability	Yes, but altenative fuels could impact negatively	Yes	VMT - slightly more stability
Responsiveness (to Inflation and to Road Usage)	Non-responsive to inflation, unless indexed partly responsive to VMT	Non-reponsive to inflation, unless indexed fully responsive to VMT	No difference for inflation; VMT, of course, tracks VMT best
Flexibility	Yes; can be adjusted	Yes; can be adjusted	No difference
Appropriateness of Dedication	Yes	Yes	No difference
Point of Taxation and Incidence	Gasoline - energy companies - very few taxpayers; diesel- heavy vehicle owners - hundred thousands for diesel	Vehicle owners; likely 100 millinn + taxpayers	Motor fuel taxes many fewer taxpayers
Compliance Cost (Cost of Paying)	Very low - almost negligible for gasoline; higher for diesel	$6 to $8 billion start up; $1 to $1.5 billion annual after first year	Motor fuel taxes much less expensive
Potential for Tax Evasion	Gasoline 3-5% Diesel and Gasohol 15-25%; probably declining	10 % (perhaps greater)	Gasoline taxes lower evasion than vmt fees; diesel and gasohol comparable to vmt fees
Administrative Costs (Costs of Collecting) and Issues	about $200 million per year for state/federal combined	$400 to 500 million per year for federal and states combined	Motor fuel taxes much less expensive
Equity by Vehicle Class	Not directly proportional to vehicle cost respon-sibility per mile	Can be set to vehicle cost responsibility per mile if combined with weight distance tax	VMT fees combined with weight distance fees more equitable
Equity by Income Group	Somewhat higher proportion of income spent by lower income groups	VMT fees slightly less incident on lower income groups than fuel taxes	No appreciable difference
Equity by Geography	Dependent on highway cost allocation results	Dependent on highway cost allocation results	No appreciable difference
Relationship to Economic Efficency	Partially promotes economic efficiency	Partially promotes economic efficiency	No appreciable difference
Ease of Imple-mentation	Assumed high	Assumed low	Fuel taxes more implementable

CONCLUSIONS: FUEL TAXATION

- Some improvements are being made
- Some alternative fuels can be taxed like petroleum fuels
- Will remain viable
- Administrative ease and low compliance cost (except electric, CNG)
- Need to avoid subsidies
- Other sources and new approaches should be considered
- Augment, not replace
- Smooth transition
- Each level of government and jurisdiction should decide

CONCLUSIONS: VEHICLE TAXES

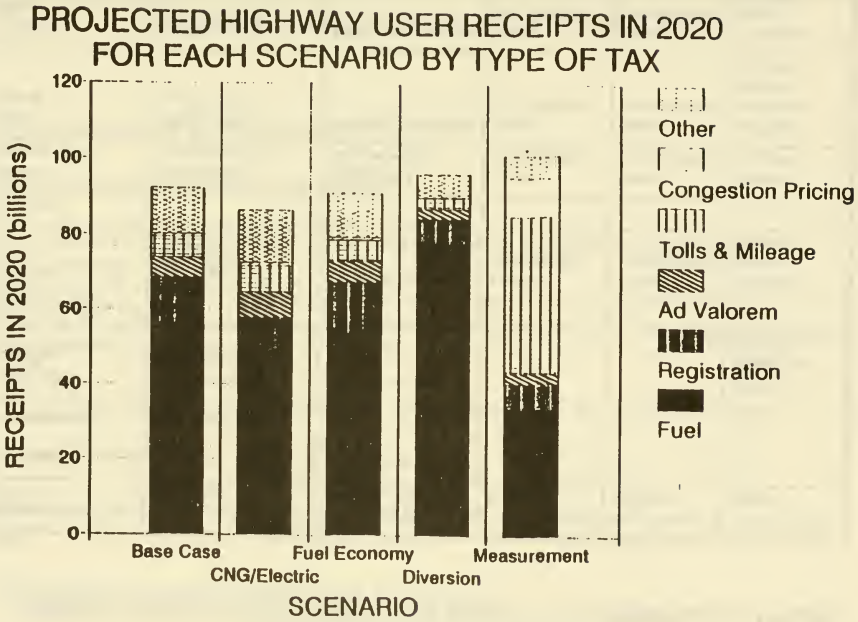
- Can be inflation sensitive
- Impacts on lower income
  - Based on value
  - Based on weight or power
- Not related to vehicle use and cost responsibility

CONCLUSIONS: MILEAGE TAXES

- Most equitable
- Difficult without automation
- Need to develop technologies
- IVHS program shold give priority to tax systems
- Phase in rather than switch

CONCLUSIONS FROM REVIEW OF ALTERNATIVE FUELS PROGRAMS

- No single program is likely to have a major impact on surface transportation finance
- California's zero emission vehicle requirement is the only program that requires sales of AFVs to consumers
- No large scale market exists within the next few years for AFVs
- The cumulative effects of all the programs will be less than the sum of the individual effects
- The cumulative effects of all the programs will be substantially greater than the effects of any single program
- The long-term impacts of the programs are difficult to predict -- principal uncertainty is government regulation
- Large scale markets for AFVs may develop after 2000


PROJECTED HIGHWAY USER RECEIPTS IN 2020
FOR EACH SCENARIO BY TYPE OF TAX
RECEIPTS IN 2020 (billions)
120
100
80
60
40
20
0
Base Case
CNG/Electric
Fuel Economy
Diversion
Measurement
SCENARIO
Other
Congestion Pricing
Tolls & Mileage
Ad Valorem
Registration
Fuel

VMT MEASUREMENT SCENARIO
SUMMARY EVALUATION OF IMPACT ON SURFACE TRANSPORTATION FINANCE

Highway User Tax	Adequacy	Simplicity & Effectiveness	Equity	Efficiency	Other
Fuel Taxes					
Conventional	Reduced yield				
Alternative Fuels	Little yield; high subsidies likely	Uncertain effect			Public support for subsidy
Registration Fees					
VMT Tax	Major new opportunity	Difficult; uncertain	Major improvement	Major improvement	Uncertain public support
Sales Tax					
Weight-Distance Tax	Substantially increased yield	Substantial improvement	Major improvement	Major improvement	Mixed support
Cong Pricing	Major new opportunity	Difficult; uncertain	Major improvement	Major improvement	Difficult, uncertain public support
Emission Fees	Reduced yield	Difficult; uncertain	Major improvement	Major improvement	Uncertain public support

CONCLUSIONS FROM ANALYSIS OF SCENARIOS

- All scenarios have uncertainties and hurdles
- All involve potential threats to finance
- Only one offers potential for major improvements in finance — the VMT Measurement Scenario
- Only in the VMT Measurement Scenario are major decisions the responsibility of transportation officials
- The optimal technological systems for measuring VMT are not known now
- Several technical paths should be pursued
- IVHS program should identify improvement of tax collection system as a major goal
- Conclusions are largely independent of scenarios

NEW APPROACH

- A compact with the public

- Revenues linked to benefits

  - Mobility
  - Economy
  - Environment

- Performance is monitored

- Many appropriate revenue sources

POTENTIAL RESEARCH PROJECTS

- Investigation of the most promising technologies for monitoring use of highways
- Demonstration program for the most promising improvements in technology
- Development of uniform standards for transponders
- Research on the legal aspects
- Investigation of evasion of taxes and options for responding to the problem
- Investigation of truck tax issues

INVESTIGATION OF TRUCK TAX ISSUES

- Survey of related studies and data available
- Analysis of prospects of current initiatives
  - Fuel tax enforcement
  - Automation of multistate tax proration systems
  - Automation of mileage reporting
  - IVHS projects
- Estimation of current impacts and trends
  - Administrative and enforcement costs
  - Compliance burden on motor carriers
  - Economic impacts
  - Evasion
  - Equity and efficiency of truck taxes
  - Intermodal competition
- Assessment of future options
  - Integrated base state system
  - High tech options
  - Graduated fuel tax surcharge system
  - National or interlinked databases on truck tax status

American Association of
State Highway and
Transportation Officials

Howard Yerusalim, President
Secretary of the
Pennsylvania Department
of Transportation

Francis B. Francois
Executive Director

LIFE CYCLE COST SURVEY

Results of a Survey of the
AASHTO Standing Committee on Planning

April, 1994

Executive Office: 444 N. Capitol St., N.W., Suite 249, Washington D.C. 20001
Telephone (202) 624-5800 Telefax (202) 624-5806 Telex 4900009580 HTO

Working To Connect America

Summary of AASHTO/FHWA Life Cycle Cost Survey

In June, 1993 a survey prepared by AASHTO and Federal Highway Administration (FHWA) staff was sent to members of the AASHTO Standing Committee on Planning regarding Life Cycle Cost Analysis (LCCA). Under the Intermodal Surface Transportation Efficiency Act (ISTEA), LCCA is included in both the Metropolitan and Statewide Planning processes described in Sections 1024 and 1025 respectively.

The survey asked questions regarding the definition of LCCA, its use and purposes in AASHTO member departments, how LCCA can be improved, and areas for further research.

A total of 38 states responded to the survey. FHWA and AASHTO collaborated on the compilation of the survey responses, and the results are indicated on the pages that follow. Responses to question 5 regarding the use of consultants for LCCA, and question 9 regarding member department contacts for LCCA, were incomplete and therefore do not appear in the survey results. The survey report is available through the AASHTO publications office, telephone 202-624-5800.

In December, 1993 FHWA held a "Life Cycle Cost Symposium" to discuss issues related to the use of LCAA and recommendations for its application. The results of that symposium are expected to be published in June, 1994. Also expected to published in June, 1994 is a Federal Register notice containing an FHWA interim policy statement setting out principles of good practice developed as a result of the survey and the symposium findings. A 90 day comment period will follow prior to publication of the policy statement in final form.

Question 1: One definition of Life Cycle Cost Analysis (LCCA) is as follows:

"Life cycle cost analysis is a process for evaluating the total economic worth of one or more projects (i.e. investments) by analyzing both initial costs as well as discounted future costs, such as maintenance, 4R and user costs, over the life of the project or projects."

A. Do you agree with this definition?

B. If no, please comment or offer an alternative definition as used by your department.

Response:

State	Do you agree with this definition?	If no, please comment or offer an alternative definition as used by your department.
Alabama	Yes	
Arizona	Yes	Inclusion of user cost is subject to some debate.
Arkansas	No	Change the last phrase to read "over the expected life...".
California	No	Total "economic worth" implies assessment of benefits as well as costs. LCCA, as defined above, should say total "Pecuniary costs" if only project costs are considered; or total "economic costs" if social and environmental costs are also considered in the analysis. However, the more desirable approach is to assess benefits as well as costs to evaluate the total "economic worth". In this case, this definition would have to be modified, or other approaches to financial analysis should be employed.
Delaware	Yes	
Florida	Yes	Note: Florida DOT currently excludes user costs from some portions of LCCA in pavement design and fixed guideway transit alternatives analysis, but generally agrees with the above definition.
Illinois	No	Life cycle cost analysis is a process for estimating and evaluating the total economic worth of one or more projects (i.e., investments) by analyzing estimated initial cost, as well as discounted future costs such as maintenance, 4R, and user costs (If appropriate) over the life of the project or projects.
Indiana	Yes	
Iowa	No	LCCA is one tool that can be used in making investment decisions. It is a special case of B/C analysis that assumes the benefit side of the alternatives are equal for

State	Do you agree with this definition?	If no, please comment or offer an alternative definition as used by your department.
		all alternatives. LCCA is a process that determines an estimated economic worth by analyzing initial costs, discounted future costs, and discounted residual value over an estimated life of a project. See question #18.
Kansas	Yes	
Kentucky	Yes	
Louisiana	Yes	
Maryland	Yes	
Michigan	Yes	
Minnesota	No	Life-cycle cost is the cost (in current dollars) required to keep an existing roadway (without improvements) in place for perpetuity. It consists of two elements: routine maintenance and life-cycle treatments. The life cycle is the period of time 20-80 years between the most major treatments. We have expressed costs as annualized and different cycles and costs have been developed for different functional classes.
Mississippi	Yes	
Missouri	No	
Nebraska	Yes	Exception: User cost is extremely questionable.
Nevada	Yes	
New Hampshire	Yes	
New Jersey	Yes	
New York	Yes	
North Carolina	Yes	
North Dakota	Yes	
Ohio	Yes	

State	Do you agree with this definition?	If no, please comment or offer an alternative definition as used by your department.
Oklahoma	Yes	
Oregon	Yes	This definition appears to be satisfactory
Pennsylvania	Yes	
South Carolina	Yes	
South Dakota	No	User costs are normally included in only a few special projects. User costs are not included except in analyzing alternative routes.
Tennessee	Yes	
Texas	Yes	
Utah	Yes	
Vermont	Yes	
Virginia	Yes	
Washington	Yes	
West Virginia	Yes	
Wisconsin	No	Economic "worth" can't be determined without looking at benefits. LCCA identifies the alternative with the lowest PV of costs where all alternatives have approximately equal benefits. If benefits very, B/C analysis should be used for evaluation.

Question 2: Does your department utilize LCCA in project selection or evaluation?

Question 3: For approximately how long has your department used LCCA?

Responses:

State	Does your department utilize LCCA in project selection or evaluation?	For approximately how many years has your department used LCCA?
Alabama	No	0
Arizona	Yes	6
Arkansas	Yes	20
California	Yes	10
Delaware	No	0
Florida	Yes	20
Illinois	Yes	30
Indiana	Yes	15
Iowa	Yes	20
Kansas	Yes	25
Kentucky	No	0
Louisiana	Yes	3
Maryland	Yes	30
Michigan	Yes	8
Minnesota	No	
Mississippi	No	0
Missouri	Yes	0
Nebraska	No	0
Nevada	Yes	
New Hampshire	No	0

State	Does your department utilize LCCA in project selection or evaluation?	For approximately how many years has your department used LCCA?
New Jersey	Yes	10
New York	Yes	5
North Carolina	No	0
North Dakota	Yes	10
Ohio	Yes	10
Oklahoma	No	0
Oregon	Yes	3
Pennsylvania	Yes	10
South Carolina	Yes	2
South Dakota	Yes	
Tennessee	Yes	6
Texas	Yes	20
Utah	Yes	8
Vermont	No	0
Virginia	Yes	10
Washington State	Yes	11
West Virginia	No	0
Wisconsin	Yes	10
Number of States Using LCCA	**27**	

Question 4: Please indicate the modes in which LCCA is used

Responses:

State	Aviation	Highways	Rail	Transit	Water
Arizona	Yes	Yes	No	No	No
Arkansas	No	Yes	No	No	No
California	No	Yes	No	No	No
Florida	Yes	Yes	Yes	Yes	Yes
Illinois	Yes	Yes	No	Yes	Yes
Indiana	No	Yes	No	No	No
Iowa	Yes	Yes	Yes	No	No
Kansas	No	Yes	No	No	No
Louisiana	No	Yes	No	Yes	No
Maryland	Yes	Yes	No	Yes	No
Michigan	No	Yes	Yes	No	No
Minnesota	No	No	No	No	No
Missouri	Yes	Yes	No	No	No
Nevada	No	Yes	No	No	No
New Jersey	No	Yes	No	No	No
New York	Yes	Yes	No	Yes	No
North Dakota	No	Yes	No	No	No
Ohio	No	Yes	No	No	No
Oregon	No	Yes	No	No	No
Pennsylvania	No	Yes	No	No	No
South Carolina	No	Yes	No	No	No
South Dakota	No	Yes	No	No	No
Tennessee	No	Yes	No	No	No
Texas	No	Yes	No	No	No
Utah	No	Yes	No	No	No
Virginia	No	Yes	No	No	No
Washington State	No	Yes	No	No	No
Wisconsin	Yes	Yes	No	No	No
Total	**8**	**27**	**3**	**5**	**2**

Question 6: Please indicate the purposes for which LCCA is used in your department.

Responses:

State	Policy Analysis and Development	Planning System	Systemwide Programming	Project Level Analysis
Arizona	No	No	No	Yes
Arkansas	No	No	No	Yes
California	No	No	No	Yes
Illinois	No	No	No	Yes
Florida	No	No	No	Yes
Indiana	No	No	No	No
Iowa	Yes	Yes	Yes	Yes
Kansas	No	No	Yes	Yes
Louisiana	Yes	No	No	Yes
Maryland	No	No	No	Yes
Michigan	No	No	No	Yes
Minnesota	No	No	No	Yes
Missouri	No	No	No	Yes
Nevada	No	No	No	Yes
New Jersey	No	No	No	Yes
New York	Yes	No	No	Yes
North Dakota	No	No	No	Yes
Ohio	No	No	No	Yes
Oregon	No	No	Yes	Yes
Pennsylvania	No	No	No	Yes
South Carolina	No	No	No	Yes
South Dakota	Yes	No	No	Yes
Tennessee	No	No	No	Yes
Texas	No	Yes	Yes	No
Utah	Yes	Yes	Yes	Yes
Virginia	No	No	No	Yes
Washington	Yes	Yes	Yes	Yes
Wisconsin	No	No	No	Yes
Total	**6**	**4**	**6**	**26**

Question 7: Please indicate whether LCCA is used in any phase of the following activities.

A. Program of Pavement Projects
B. Program of Bridge Projects
C. Pavement Type Selection
D. Bridge Type Selection for New or Replaced Bridges
E. 4R Project Type Selection
F. Alternative Pavement Project Selection
G. Alternative Bridge Project Selection

Responses:

State	Pavement Project Programs	Bridge Project Programs	Pavement Type Selection	Bridge Type Selection	4R Project Selection	Alternative Pavement Project Selection	Alternative Bridge Project Selection
Alabama	No	No	No	No	No	No	No
Arizona	Yes	No	Yes	No	Yes	Yes	No
Arkansas	No	No	Yes	No	No	No	No
California	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Delaware	No	No	No	No	No	No	No
Florida	Yes	No	Yes	Yes	Yes	Yes	Yes
Illinois	No	No	Yes	No	No	No	No
Indiana	Yes	Yes	Yes	Yes	Yes	No	No
Iowa	Yes	No	No	No	Yes	Yes	No
Kansas	Yes	No	Yes	Yes	No	Yes	Yes
Kentucky	No	No	No	No	No	No	No
Louisiana	No	No	Yes	Yes	No	Yes	Yes
Maryland	Yes	No	No	Yes	No	Yes	No
Michigan	No	No	Yes	No	Yes	No	No
Minnesota	No	No	Yes	No	No	No	No
Mississippi	No	No	No	No	No	No	No

State	Pavement Project Programs	Bridge Project Programs	Pavement Type Selection	Bridge Type Selection	4R Project Selection	Alternative Pavement Project Selection	Alternative Bridge Project Selection
Missouri	No	No	Yes	No	Yes	No	No
Nebraska	No	No	No	No	No	No	No
Nevada	No	No	Yes	No	No	Yes	No
New Hampshire	No	No	No	No	No	No	No
New Jersey	No	No	Yes	No	No	No	No
New York	No	Yes	Yes	No	Yes	No	Yes
North Carolina	No	No	No	No	No	No	No
North Dakota	No	No	Yes	No	Yes	No	No
Ohio	No	No	Yes	No	Yes	No	No
Oklahoma	No	No	No	No	No	No	No
Oregon	No	Yes	Yes	Yes	Yes	Yes	Yes
Pennsylvania	No	No	Yes	No	Yes	Yes	No
South Carolina	No	No	Yes	No	No	No	No
South Dakota	No	No	Yes	Yes	No	Yes	Yes
Tennessee	No	No	Yes	No	No	No	No
Texas	No	No	No	No	No	No	No
Utah	Yes	No	Yes	No	Yes	Yes	No
Vermont	No	No	No	No	No	No	No
Virginia	Yes	No	Yes	No	No	Yes	No
Washington State	Yes	Yes	Yes	Yes	No	No	No
West Virginia	No	No	No	No	No	No	No
Wisconsin	No	No	Yes	Yes	No	No	No

State	Pavement Project Programs	Bridge Project Programs	Pavement Type Selection	Bridge Type Selection	4R Project Selection	Alternative Pavement Project Selection	Alternative Bridge Project Selection
Total	10	5	25	10	13	13	7

Question 8: Please briefly describe how LCCA is used in any of the above for which you have checked "Yes" in Question 7.

Response:

State	How LCCA is used
Arizona	Pavement management to determine pavement alternatives to maximize life, minimize cost. i.e. Concrete vs. asphaltic concrete, slurry vs. overlay vs. repave.
Arkansas	Each pavement type is evaluated based on initial cost and future maintenance cost over the expected pavement design life.
California	Mostly for alternatives to the same project, rather than project prioritization. Examples: asphalt concrete vs. portland cement in rehab projects; and when project design periods are different. For projects with various feasible alternatives, evaluations would be done based on many factors, one of which is the LCCA.
Illinois	All pavement-type selection for new construction or reconstruction is based on LCCA using a modified R.H. Baldock method. A discount rate of 3% is used and the costs are analyzed over a 40-year life.
Florida	Please refer to attached Value Engineering and Alternatives Analysis literature for precise details.
Indiana	1. Pavement Treatment - most efficient method picked based on LCCA. 2. Roadway improvement
Iowa	The LCCA has been used to help determine the type of work, primarily in terms of pavement and rehabilitation of pavements.
Kansas	Network Optimization of KDOT's Pavement Management System uses LCCA to select a program of pavement projects. Project optimization of PMS uses LCCA to identify specific Scope of individual projects. LCCA is used in bridge design to evaluate alternative strategies including rehabilitation and replacement.
Louisiana	Engineering judgement is used in the selection of bridge types in an informal LCCA procedure. For example, concrete is preferred to timber due to timber's shorter life span.
Maryland	To establish priorities in overlay program; for pavement design; and for determination between remedial and new structure
Missouri	LCCA used as a guide for determination of pavement type selection and rehabilitation.
Nevada	Numerous possible repair strategies are evaluated using LCCA to rank the alternates based upon their annual costs or net present value.
New Jersey	Estimates of LCCA are made of alternate pavement types (bituminous vs. concrete) and alternate rehabilitation (grinding vs. overlay).
New York	Re: Pavements: Once a pavement project is on the program, a detailed pavement evaluation is conducted and treatment guidelines are used to match the distress information collected to appropriate designs. An LCCA is then conducted to determine which design is selected for construction. We use present worth as the economic evaluation technique with a 4% discount rate. Re: Bridges: Bridge projects are selected based on severe deficiency. When remedial--but not severely deficient--work is necessary, our regions were instructed to use LCCA as one factor in selecting bridges as capital projects. The output of our bridge needs assessment model (BNAM) reflects a PSEUDO LCCA (based in initial capital costs plus maintenance costs).
North Dakota	LCCA of pavement rehab options (CPR vs. immediate reconstruction and PCC vs. HMA) is used as a tool in the decision making process. Other considerations are ESAL's stopping/turning movements, anticipated environmental degradation (poor soils, high water table) etc.

State	How LCCA is used
Ohio	Pavement type and/or pavement rehabilitation strategies are analyzed using current dollars for both initial pavement construction cost and estimated future pavement rehabilitation construction costs. A sensitivity analysis of these costs using discount rates ranging from 0 to 6% is done to account for inflation and interest. User costs are being studied, but are not presently taken into consideration.
Oregon	1. Pavement Management Systems - Used for pavement type selection and alternative pavement project selection. 2. Bridge Management Systems - This system is being developed and will be used comprehensively. The program is called PONTIS and is about two years away from implementation.
Pennsylvania	LCCA is used to determine pavement type selection for all major projects, usually over $5 million.
South Carolina	LCCA is used as a component of pavement type selection for new pavements and rehabilitation where appropriate.
South Dakota	Life cycle cost analyses are used to aid decision-making by helping determine the most cost-effective designs.
Tennessee	Life cycle costs are compared for different pavement options.
Utah	LCCA is the economic analysis tool for evaluation of alternatives. UDOT does not use any other economic evaluation technique when considering project alternatives.
Virginia	LCCA is used for pavement rehab projects to select the lowest cost alternative (i.e., construction methods and type of materials). VDOT requires all maintenance projects that improve our system and cost $2 million or more must go through value engineering. LCCA is a big part of value engineering). Routine maintenance projects such as surface treatments and overlays are not to go through value engineering.
Wisconsin	To compare the total cost of alternatives as one input to the selection of the most appropriate option for construction/rehabs.

Question 10: Are user costs included in your LCCA? If yes, please indicate the user cost categories included:

Fuel costs
Vehicle operating costs other than fuel
Delay costs
Air quality costs
Other cost categories

Responses:

State	Are User Cost Included?	Fuel costs	Vehicle operating costs other than fuel	Delay costs	Air quality costs	Other costs
Arizona	Yes	No	No	Yes	No	Yes
Arkansas	No	No	No	No	No	No
California	Yes	No	Yes	Yes	No	Yes
Florida	Yes	Yes	Yes	Yes	No	No
Illinois	Yes	Yes	No	Yes	No	Yes
Indiana	Yes	No	Yes	Yes	Yes	No
Iowa	No	No	No	No	No	Yes
Kansas	Yes	No	No	No	No	Yes
Louisiana	Yes	Yes	Yes	Yes	Yes	No
Maryland	Yes	Yes	Yes	No	No	No
Michigan	No	No	No	No	No	No
Minnesota	No	No	No	No	No	No
Missouri	No	No	No	No	No	No
Nevada	Yes	No	No	Yes	No	No
New Jersey	No	No	No	No	No	No
New York	Yes	No	No	Yes	No	No
North Dakota	No	No	No	No	No	No
Ohio	No	No	No	No	No	No

State	Are User Cost Included?	Fuel costs	Vehicle operating costs other than fuel	Delay costs	Air quality Costs	Other costs
Oregon	Yes	Yes	Yes	Yes	Yes	Yes
Pennsylvania	Yes	No	No	No	No	Yes
South Carolina	No	No	No	No	No	No
South Dakota	Yes	Yes	Yes	Yes	No	Yes
Tennessee	No	No	No	No	No	No
Texas	Yes	No	No	Yes	No	No
Utah	Yes	Yes	Yes	Yes	No	No
Virginia	No	No	No	No	No	Yes
Washington	Yes	No	Yes	Yes	No	Yes
Wisconsin	No	No	No	No	No	No
Total	**16**	**7**	**9**	**13**	**3**	**10**

Question 11: What analysis period is commonly used for (1) new and 4R pavement projects; (2) new and 4R Bridge Projects? Does the analysis period vary by functional classification or other factor? If yes, what factor or factors?

Responses:

State	Analysis period for pavement projects (years)	Analysis period for bridge projects (years)	Does the analysis period vary by functional class or other factors?	What factors may cause analysis periods to vary?
Arizona	35	N/A	No	
Arkansas	35	N/A	No	
California	35	N/A	No	
Florida	40	100	No	
Illinois	40	N/A	Yes	Water Resources: Estimated useful or economic life of project; Usually 50 years, but may be as little as 15 years.
Indiana	20	50	No	
Iowa	60	N/A	Yes	Different alternatives can have different life, therefore, a common life term needs to be used and/or the appropriate residual value used.
Kansas	30	50	Yes	Route Classification for bridges
Louisiana	20	50	Yes	Bridges that are short-spanned are evaluated as an element of the roadway with a 20 year life. Significant structures, e.g., a Mississippi River crossing, are evaluated with a 50 year life.
Maryland	30	30	No	
Michigan	35	N/A	No	
Minnesota	N/A	N/A	No	
Missouri	30	20	No	
Nevada	20	N/A	Yes	20 years Flexible Pavement ; 30 years Rigid Pavement
New Jersey	40	N/A	No	

State	Analysis period for pavement projects (years)	Analysis period for bridge projects (years)	Does the analysis period vary by functional class or other factors?	What factors may cause analysis periods to vary?
New York	45	75	Yes	Re: Pavement projects: the scope of the treatment. For example, we use 45 years for new PCC pavements while we use 30 years for pavement rehabilitation. Re: Bridge projects: The design life of a new bridge on the state system will be 75 years. The design life of a new bridge off the state system varies depending on federal, state, or local fund sources.
North Dakota	30	N/A	No	
Ohio	35	N/A	No	
Oregon	30	75	Yes	Bridge Replacement - level of service
Pennsylvania	40	N/A	Yes	On lower volume interstates or expressways an eight or ten year design with a 20 year analysis period is accepted.
South Carolina	30	N/A	No	
South Dakota	18	N/A	No	
Tennessee	30	N/A	No	
Texas	30	N/A	Yes	Interstate - 30 years
Utah	40	50	No	
Virginia	30	30	No	
Washington	40	N/A	No	
Wisconsin	50	50	No	

Question 12: Is any part of LCCA automated? If so, please indicate which of the following is used:

Computer models, Spreadsheets; Proprietary models; Other

Please comment briefly as appropriate

Responses:

State	Is any part of LCCA automated?	Computer models	Spreadsheets	Proprietary models	Other	Discussion
Alabama	No	No	No	No		
Arizona	Yes	Yes	Yes	Yes		
Arkansas	Yes	No	No	No		PC application for economic analysis of pavement selection from AASHTO guide for design and pavement structure.
California	Yes	Yes	No	No		Our bridge management system (PONTIS) has some LCCA built into its economic analysis routines, but that system is not fully operational yet.
Delaware	No	No	No	No		
Florida	Yes	Yes	Yes	No		The process is partially automated in that customized spreadsheets have been created for some analyses, but some hand-preparation is required. Other projects were analyzed with hand calculator or simple computer programs.
Illinois	Yes	Yes	Yes	No		
Indiana	No	No	No	No		
Iowa	Yes	No	Yes	No		The calculation part of the process is quite simple and amenable to spreadsheets.

State	Is any part of LCCA automated?	Computer models	Spreadsheets	Proprietary models	Other	Discussion
						The difficult part is determining the values to input.
Kansas	Yes	Yes	Yes	No	AASHTO DARWIN-2 does LCCA on pavement reconstruction projects.	PMS uses a computer model containing prediction models and optimization techniques to analyze at the network level.
Kentucky	No	No	No	No		
Louisiana	Yes	Yes	Yes	No		A spreadsheet is used for most projects, but the U.S. DOT Decision Support Software is also used.
Maryland	Yes	No	Yes	Yes		Most analysis is computed on electronic spreadsheets. SHA Pavement Design also uses a model established by University of Maryland.
Michigan	Yes	No	Yes	No		
Minnesota	No	No	No	No		
Mississippi	No	No	No	No		
Missouri	No	No	No	No		
Nebraska	No	No	No	No		
Nevada	Yes	Yes	Yes	No		
New Hampshire	No	No	No	No		
New Jersey	No	No	No	No		
New York	Yes	Yes	No	No		Re-pavements, " In house" developed software. Re-Bridges, NYSDOT has used the bridge needs assessment model (BNAM)

State	Is any part of LCCA automated?	Computer models	Spreadsheets	Proprietary models	Other	Discussion
						and the Bridge Management system (BMS).
North Carolina	No	No	No	No		
North Dakota	Yes	No	Yes	No		Primitive spreadsheet analysis tailored for individual projects
Ohio	Yes	No	Yes	No		
Oklahoma	No	No	No	No		
Oregon	Yes	Yes	Yes	Yes		Pavement Management - using Lotus spreadsheets Bridge Management - will tie into AASHTO Ware and use PONTIS.
Pennsylvania	Yes	No	Yes	No		
South Carolina	No	No	No	No		
South Dakota	Yes	No	Yes	No		
Tennessee	No	No	No	No		
Texas	Yes	Yes	No	No		Computer model used in pavement design.
Utah	Yes	Yes	No	Yes		Part of DARWIN pavement design. Computer Program. Integral analysis tool of dTIMS. Pavement Management System proprietary.
Vermont	No	No	No	No		
Virginia	Yes	No	Yes	No		LCCA for pavement project selection utilizes a simple LOTUS spreadsheet.

State	Is any part of LCCA automated?	Computer models	Spreadsheets	Proprietary models	Other	Discussion
Washington	Yes	No	Yes	No		
West Virginia	No	No	No	No		
Wisconsin	Yes	No	Yes	No		
Total	**22**	**11**	**17**	**4**		

Question 13: Do you use or plan to use LCCA in your department's (1) Pavement Management System; (2) Bridge Management System?

Question 14: Please briefly describe the role of LCCA for those checked "Yes" in Question 13.

Response:

State	Do you use or plan to use LCCA in Pavement Management Systems	Do you use or plan to use LCCA in Bridge Management Systems	Discussion of the role of LCCA
Alabama	Yes	Yes	Once sufficient data are collected to determine true life cycle costs of the various materials, designs, etc., they will be utilized by the department in the design choices of our future projects.
Arizona	Yes	No	Budget levels established from a limited form of lowest life cycle cost.
Arkansas	Yes	Yes	BMS will utilize PONTIS software. dRoad proprietary software from Deighton Associates will be used for PMS applications.
California	Yes	Yes	Analysis of various pavement strategies in relation to pavement types, structural sections and sub-base soils in different environmental and traffic conditions. In PONTIS, all LCCA profiles are determined using probabilities, which are analyzed with various costs to obtain an equivalent to LCCA. "Best Solutions" from among all reasonable alternatives, are presented in the context of "least long-term cost".
Delaware	Yes	No	To assist the Department's Director to make a better decision when presented with two or more alternatives.
Florida	Yes	Yes	Florida DOT plans to incorporate LCCA into these management systems in the future in order to optimize preservation projects.
Illinois	Yes	Yes	Pavements designed using LCCA are monitored by the Department's Pavement Management System. We expect the Bridge Management System, which is in development, will allow the use of LCCA in bridge design and maintenance.
Indiana	Yes	Yes	
Iowa	Yes	No	LCCA is to be used in some form in pavement management optimization. Optimization methods

State	Do you use or plan to use LCCA in Pavement Management Systems	Do you use or plan to use LCCA in Bridge Management Systems	Discussion of the role of LCCA
			(derived from some form of cost analysis) will be used at project and system levels. Pavements are one type of project that are suitable for LCCA since the benefit stream between alternatives can be assumed equal.
Kansas	Yes	Yes	LCCA is used to assess alternate strategies for network preservation in PMS. Used as a tool to compare alternate strategies in bridge management
Kentucky	Yes	Yes	The role of LCCA is unclear to us at this point, however, we do expect that LCCA will be a part of pavement and bridge management systems. Kentucky is currently conducting research that will incorporate LCCA into pavement design decisions.
Louisiana	No	No	
Maryland	Yes	Yes	As noted previously - to evaluate alternatives for pavement design and determine level of work for bridge projects; Remedial vs. Bridge replacement
Michigan	Yes	Yes	
Minnesota	Yes	Yes	Life-cycle cost analysis is used in pavement management to calculate annual costs. A 4.5 percent interest rate is used. In bridge management life-cycle cost analysis will be used in new bridge management system software that has not been implemented yet.
Mississippi	No	No	We use benefit cost to help determine build - no build situations, however, no procedures have been developed by Mississippi Department of Transportation for LCCA. Further study will need to be made to develop procedures. Currently the University of Mississippi is under contract in developing Life Cycle Curves for pavement management.
Missouri	Yes	Yes	
Nebraska	No	No	
Nevada	Yes	Yes	Priorities , Programming
New Hampshire	Yes	Yes	In each system, LCCA will be used to cost constrain alternative treatment scenarios as our transportation

State	Do you use or plan to use LCCA in Pavement Management Systems	Do you use or plan to use LCCA in Bridge Management Systems	Discussion of the role of LCCA
			investments program is assembled.
New Jersey	Yes	Yes	This is under development at the present time.
New York	Yes	Yes	Re-pavements: We currently employ LCCA at the project-level, in treatment selection for pavements. We also plan to use LCCA at the network-level for program development. However, work remains in developing the models. Re-bridges: We intend to more fully use LCCA as an element in calculating the optimal expenditure on individual bridge projects.
North Carolina	Yes	Yes	Pavement management used in comparing use of rigid vs. flexible pavement. Bridge management evaluates various components of the bridge system and indicates the feasibility of improving individual components and compares to the remaining life of other bridge components.
North Dakota	Yes	No	PMS uses LCCA somewhat in its optimization. PMS optimization is used primarily as a planning tool, not specifically for programming projects.
Ohio	No	No	
Oklahoma	Yes	Yes	Although LCCA is not an initial goal, an acceptable level of life cycle cost analysis may result from pavement management analysis over time as more historical data is obtained.
Oregon	Yes	Yes	BMS: The LCCA role using PONTIS is to develop an overall comprehensive system which will look into all aspects of bridge - unit costs, bridge type costs, maintenance costs, parts costs, and tie into performance measures and pavement management system. PMS: The Oregon model is very limited
Pennsylvania	Yes	Yes	There is presently a project underway to develop "performance curves. For prioritization and optimization which it is hoped will allow LCCA to be used as an integral part of our pavement management system (PMS). In the bridge management system (BMS) the development of LCCA is planned. It is envisioned that the LCCA will be used to optimize project/programs selection using consideration of user

State	Do you use or plan to use LCCA in Pavement Management Systems	Do you use or plan to use LCCA in Bridge Management Systems	Discussion of the role of LCCA
			costs and benefits based on traffic and accident data.
South Carolina	No	No	
South Dakota	Yes	Yes	LCCA would be used to help determine viable pavement treatment alternatives. LCCA will probably be used to help determine rehabilitation or replacement options for bridge rehabilitation projects.
Tennessee	Yes	Yes	Pavement Management: In optimization routines. Bridge Management: The Department is in the process of installing the PONTIS Bridge Management System, which contains routines for estimation of bridge deterioration rates. Once data is gathered on deterioration rates and maintenance costs for bridges designed to current standards and details, it should be possible to implement LCCA routines.
Texas	Yes	No	LCCA is used in pavement design
Utah	Yes	Yes	LCCA will consider costs over the anticipated design life and allow economic evaluation of dissimilar cash flow alternatives - Allows analysis between first cost and continuing expected maintenance costs including salvage value.
Vermont	No	No	We continue to review the literature and current practice to see if such techniques are applicable to VT.
Virginia	Yes	Yes	The maintenance Division's Pavement Management System plans to use LCCA to identify the "optimum" maintenance repair alternative to correct deficient pavements. It is envisioned that an automated software will employ "decision-free" type analysis. VDOT will be using Pontis for its bridge management system, which will incorporate life cycle cost analysis.
Washington	Yes	Yes	Used for floating bridge anchor cable decisions (Cathodic Protection vs. more frequent cable replacement); deck rehab and protection (overlay) vs deck replacement decisions -- Currently, different types of preservations needs are not compared using LCCA. Funding levels are established for each respective of need (painting, decks,replacement, etc. ...They don't compete with each other), they are each

State	Do you use or plan to use LCCA in Pavement Management Systems	Do you use or plan to use LCCA in Bridge Management Systems	Discussion of the role of LCCA
			established to meet specific service objective. This will change with BMS. -- Used to develop lowest life-cycle cost model in the Preservation Program
West Virginia	Yes	Yes	LCCA will be one of the many factors that will be used by professional staff and administrators in the decision-making process.
Wisconsin	Yes	Yes	
Total	32	27	

Question 15: Many analysts acknowledge difficulties and weaknesses in he application of LCCA procedures, including computational difficulties, absence of or weakness in the needed data, sensitivity of the procedure to discount rate assumptions, analysis period, and others. Please indicate your thoughts as to areas in which LCCA procedures should be improved, and your recommendations as to appropriate research topics related to LCCA.

Responses:

State	Please indicate your thoughts as to areas in which LCCA procedures should be improved, and your recommendations as to appropriate research topics related to LCCA.
Alabama	When determining life cycle costs, we must be careful to make enough observations to ameliorate the differences between the quality of work performed by the contractors. Poor workmanship would very easily bias study results.
Arizona	Clarification of discount rate for public sector. User costs difficult to establish. Environmental trade-offs nearly impossible to calculate. Future maintenance cost, deterioration rate, and salvage values are difficult to model or estimate.
Arkansas	LCCA is computationally intensive and inherently subjective in areas where little or no historical data exists. Appropriate research topics could include: a national data bank for materials/methods performance; historical deterioration modeling using deterministic and/or probabilistic methodologies.
California	The main problem is data availability and subjectiveness of some of the data used. "Expected life" is a good example of this subjectivity. Computational methods for LCCA should not create any problems. LCCA is very sensitive to discount rate. A better method of social discount rate selection should be determined. In California we sometimes use the rate of return on "Pooled Money Investment Fund" which is the return on the investment of cash balances that the State Treasurer can earn. However, the sensitivity to discount rate is not as significant for job comparison and priority assignment if projects are homogeneous, and if consistency is maintained. Future research should concentrate more on the valuation of social costs and other non-traditional costs (e.g., pollution, congestion, fossil fuel usage, and land-fill disposal costs). Avoiding land-fill disposal costs has been of concern to the legislators and environmental interest groups. If disposal costs are calculated, then recycling of materials would become more cost competitive.
Delaware	Determination of discount rate is always difficult because it varies from source to source. Perhaps a source should be identified as the reliable or "official one" for use with LCCA.

Illinois	Must allow for handling varying interest rates (i.e., cost of money). Pavement replacement as an option should be included. Inconvenience costs for "stop gap" bridge and pavement maintenance can be very high and should be included with this pricing of each repair option. Frequent repairs come at a high cost to the travelling public. Highways are forever-the analysis period actually has no end. Therefore, we suggest the beginning period be applied every five years and look ahead for the next 20 years
Florida	The projection of costs, particularly those associated with petroleum products, has always been the 'weak link" in this type of analysis. It is unlikely that environmental factors can be quantified. Despite these problems and the related issues of parameter selection (discount rates, value of time, etc.), LCCA remains a useful technique. The most useful research product would be the development of a technical manual that described methods of LCCA (including acceptable ranges of parameter values) that were consistent with ISTEA mandates.
Indiana	Our history of LCCA is not sophisticated enough to deal with the above questions and in some cases it is more of an intuitive exercise than a numerical one.
Iowa	LCCA is a "special" case benefit-cost problem and carries with it all the problems associated with estimating worth. Two areas besides those mentioned above are: 1.) estimated : "life" and valuing the residual left over (is it salvage value, useful values, etc., and what is best method to determine value before discounting.) Also, if "life" is long (50-60 years) and does the residual really have value? 2.) Identification of project types or categories that are more suited to LCCA versus those project types more suited to benefit-cost analysis.
Kansas	Better data is needed in the following areas: Maintenance costs, User costs, Salvage values. More information regarding appropriate discount rates and the effect of inflation, Information or research regarding LCCA of programs or networks using multimodal strategies.
Kentucky	The greatest difficulty in conducting LCCA is the inclusion of user costs. Guidance and research are needed in this area. Guidance is also needed on analysis period, as there seems to be much difference of opinion, and results can be sensitive to the period used. It is commonly felt that long analysis periods should be used; However, long analysis periods force the use of forecasts/assumptions for which there can be very little confidence.
Louisiana	Determining travel time values, the appropriate government borrowing rate, and forecasting fuel costs and wage rates are difficult tasks. Many maintenance costs and infrastructure salvage values are only guesses. The social costs of environmental impacts are also difficult to quantify.
Minnesota	Rules of thumb are needed for variables to be used by all in a State or region. The value of LCCA is primarily comparative from one project to another currently under consideration. Money would be wasted in trying to precisely establish a discount rate or the value of time.
Missouri	LCCA involves assumptions of date at future dates and will thus always be suspect. User costs seem especially vague yet have a tremendous influence on the process.
Nebraska	1. Weakness in setting user costs, maintenance, etc.; 2. Consistency in application: project to project, node to node, etc.; 3. In network level analysis, value of previous investment needs to be considered.
Nevada	Most specific information on user delay costs. Salvage Values. Appropriate Discount Rates.
New Hampshire	NHDOT feels further research into solving computational difficulties and providing needed data would be most beneficial. As we build our own life cycle data, we could best use valid data and techniques provided by others.
New Jersey	User costs are suspect and can significantly influence results. While discount rate (difference between inflation and

State	Please indicate your thoughts as to areas in which LCCA procedures should be improved, and your recommendations as to appropriate research topics related to LCCA.
	interest) provides a good increase percentage, it may not be the best percent. Performance of various rehabilitation techniques vary widely and affect final selection. An engineering-economic comparison of alternatives with every definable cost estimated for the life of each alternative is the same as the LCCA. To perform this type of analysis on a network of structures is not possible (i.e. the need for computer modeling). When a model is developed, there is necessarily a difference in the level of "project specific" data that cannot be programmed automatically. Having the capability of changing the models to reflect what we see actually happening is very important.
New York	Re-pavements: More work needs to be done in developing LCCA techniques for network-level analysis. Re-Bridge: At this time we have no specific views as to areas in which LCCA procedures should be improved.
North Carolina	Need more and varied categories on pavement maintenance cost. How to calculate road user cost and which of these costs are appropriate for inclusion in the analysis.
North Dakota	Need more accurate info on actual maintenance costs as well as theoretical costs of an optimal maintenance routine. Local jurisdictions have varied efforts and capabilities of maintenance... true LCCA should only include a level of maintenance that is expected. This is very difficult to assess. When being used to justify one alternative over another. User costs are very lacking in up-to-date research.
Ohio	Weakness is inability to predict the future. Pavement performance may be easier to predict as computer models and data bases develop; however, knowing pavement performance does not imply rehabilitation strategy prediction. Predicting future rehab. strategies and the timing of them influences the outcome of LCCA a great deal.
Oklahoma	There are many variables needed to drive a system to adequately provide for life cycle cost analysis. Even temperature and humidity at construction time and over the life of the pavement need to be recorded with other items, material type, construction technique, etc. The cost to collect and maintain large databases may outweigh the savings in rehabilitation strategies derived from the system. We will initially focus on LCCA categorized by construction or rehabilitation strategies by functional class.
Oregon	The principal problem is the lack of data and the need for a comprehensive database. More information is also needed on their costs.
Pennsylvania	When using LCCA procedures for highway purposes a problem has been noted regarding the comparison of projects which have different "lives", i.e., 10 year design lives with a 20 year analysis against 20 year designs with a 40 year analysis period using Equivalent Uniform Annual Costs (EUAC). There is a need for work to be done to improve this area of LCCA and determine the proper economic analysis methods to be applied by the engineering community. At present, using EUAC to compare the two above mentioned options is theoretically viable; however, the lower initial cost of the 10 year project makes it always seems to be the "most cost effective". It is our opinion that this is not always a valid finding in that the low initial cost skews the analysis in the favor of the 10 year design. Guidance and procedures need to be developed for defining and estimating user costs and benefits. Maintenance and protection of traffic costs can be shared by combining adjacent projects in some instances. Guidance is required regarding the incorporation of these circumstances in the LCCA process. Low bid procedures do not always yield the lowest life cycle costs. Guidance is required regarding the appropriate means/methods of addressing this issue. Standards and guidance are required to the degree of objective data required to support a LCCA process. It appears that extensive data would often be necessary, such as extensive truck traffic classification counts to accurately determine detour costs for a bridge project. The systematic approach to LCCA applied to highway projects is difficult to apply to other modal requirements, such as rail freight projects. There needs to be a common base line that allows all projects,

State	Please indicate your thoughts as to areas in which LCCA procedures should be improved, and your recommendations as to appropriate research topics related to LCCA.
	regardless of mode, to be compared.
South Carolina	Maintenance and user cost are undefined, making meaningful LCCA for pavement type selection difficult.
South Dakota	Adding a lot of complexity to the analysis does not aid the results because of uncertainties in the data. Simple, straight-forward procedures are recommended.
Tennessee	User costs are difficult to appropriately and accurately define, yet they can drive the process. Therefore, they should not be used or their use should be refined.
Texas	There are three areas which are difficult to predict future trends. They are traffic, economics and environment. All three of these factors play a key role in determining life cycle costs and/or planning for future needs. There are several zones of climate and environment in Texas as well as diversity of traffic loadings and patterns. These along with the above mentioned factors make predictions difficult. Until we can improve our ability to predict traffic, economics and environment, we will not be able to determine reasonable LCCA estimates.
Utah	The LCCA procedure is well documented and refined. The problems arise in the specific application by highway agencies. Research as to model sensitivity to data variance and parameter decisions need to be researched. Educating users of the models as to its application, interpretation, and limitations is the tools' greatest shortcoming.
Virginia	Areas to improve are as follows: 1) A good way to estimate salvage value of the pavement. 2) Need better historical records on costs of pavements and the amount of traffic carried by the road. 3) Modules to predict future traffic usage. 4) User costs categories - see Question # 10.
Washington	LCCA procedures have always been sensitive to the items noted above. We are concerned with the adequacy of data needed to support the LCCA. Though we have very good performance data compared to most states, it's clear extension of that data, to predict the performance of a range of alternatives for any specific project. -- The greatest weakness is the absence of data and the historical measure of the effectiveness of actions taken. LCCA procedures must be based on collection of a reasonable amount of data (not a mountain of new data that while academically desirable cannot be realistically collected due to high manpower and dollar costs) Data sensitivity analysis research is needed. Improving LCCA by 80% with 20% more data would be acceptable..... not vice versa. The most difficult issue to resolve in performing LCCA is developing the user cost inputs. Understating user cost results in a bias for "Maintaining ONLY". Overstating user cost can favor "replace to full design standard". If LCCA is to be accepted, much help (research) is needed in this area.
West Virginia	The above factors are a fairly comprehensive list of problems Analysis period and discount rate assumptions are the most significant.
Wisconsin	LCCA techniques are straightforward and well developed. Research should be concentrated on estimating the flow of costs associated with the alternatives under consideration in any LCCA analysis.

Question 16: Sections 1024 and 1025 of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) refer respectively to Metropolitan and Statewide Planning. Both sections list LCCA among the factors to be considered in these two respective planning processes. Please briefly indicate your views as to how these specific requirements should be implemented (1) at the federal level; (2) at the state and MPO level.

Responses:

State	How should these requirements be implemented at the federal level	How should these requirements be implemented at the state and MPO level
Alabama	The Federal guidelines should be flexible enough to recognize the fact that life cycle costs could vary among the states due to amounts and types of traffic, climate, natural resources, etc. True life cycle costs will be a long term study and may be unique to each state or region.	The states and MPO's should adopt design and operational policies consistent with the results that are obtained from the life cycle cost studies.
Arizona	LCCA should be of limited use and the U.S. DOT should allow a fairly long learning curve to develop data models. LCCA should not be required for statewide planning-only used for management systems.	Some form of LCCA should be a component of various management systems.
Arkansas	The FHWA should provide guidance in promoting and disseminating research information while recognizing the uniqueness and legislative authority of each governmental entity.	The state DOT is responsible for cooperating with the MPO in metropolitan areas and consulting with local officials in other areas in the planning processes and in the development, establishment, and implementation of ISTEA management systems.
California	First, these two sections of ISTEA should be changed to require a broader investment analysis rather than LCCA. LCCA is a good method of analysis for equipment procurement where benefits are generally so similar that only cost analysis is sufficient for investment decision making. However, in transportation projects, benefits are so dissimilar that alternative methods of investment analysis--benefit-cost ratio, internal rate of return analysis, net present value method, etc.-- can better help in project evaluation and selection. An NCHRP publication describing different methods and approaches with some case studies would be quite beneficial to transportation practitioners. When such a publication is available, there should be followup training courses. With respect to implementation, we should try to simplify and standardize methodologies and make them available for planners and engineers. If we can present a convincing case on the benefits of using such methods of analysis, ISTEA requirement will be implemented.	Much of the comments provided above apply to MPOs as well. MPOs are short of funds and personnel. If they are provided with standardized procedures, easy to use computer programs, training and technical assistance, they will implement ISTEA requirements.
Delaware	Broad guidelines should be presented because of the extreme variability of size, organization, and resources of different states. Also, because all MPO's must all be	In our state it is difficult to imagine either of our MPO's taking a lead in developing the planning process or management systems. We expect the DOT to do this

State	How should these requirements be implemented at the federal level	How should these requirements be implemented at the state and MPO level
	accommodated.	using already developed Pavement Management System as a prototype.
Florida	LCCA should be used as one of many inputs into the planning process. It should not be used as a single factor to disqualify or sidetrack candidate projects, nor should it be used by U.S. DOT (alone or in combination) to alter state and local project priorities.	LCCA should be used as one part of a multi-faceted, systematic planning process. It should not be used as a stand-alone, punitive measure to disqualify expensive projects common in urban environment. Some states may not have access to useful long-range estimates of multimodal project costs; U.S. DOT may have to supply data and/or resources.
Illinois		As part of the management system.
Iowa	LCCA or some derivative should be used on systems basis to aid in making policy of defining investment strategies. For example, LCCA can be useful in determining the mix of resurfacing versus reconstruction or the general type of 4R work required. LCCA should also be and is used on project level determinations. However, specific LCCA processes or procedures should not be mandated or required; it should be state or MPO discretion on how to consider LCCA.	The Federal role is one of providing technical assistance and research and information transfer on LCCA methods/procedures. It is not one of setting specific processes for inclusion into state/MPO planning effort.
Kansas	FHWA should verify that life cycle costs are considered in the development of the STIP. The requirements for development of management systems will ensure this is done for pavements and bridges. However, the results of these systems should only be a tool in the selection process as overall management requires a balancing of needs from individual management systems.	The development and use of management systems will institutionalize the use of LCCA at the State level. States should work with MPO's to insure LCCA is part of their metropolitan planning process.
Kentucky	With the expectation of a review role, there does not seem to be a role, at the federal level, for consideration of life cycle costs in either metropolitan or statewide planning.	As a practical matter, life cycle costs can be considered in only an indirect manner in metropolitan and statewide planning activities. As management systems become a part of planning processes, life cycle costs may have a more direct effect on planning recommendations.
Louisiana	The federal level should allow enough flexibility in whatever procedure is adopted to encourage thoughtful analysis rather than a cookbook approach. However, enough guidance should be given to provide the states with a procedure that is similar from state to state.	Education of the policy makers as to what makes a good project is important in the State of Louisiana.
Maryland	Needs to be encouraged as an analysis tool. "Dust off" the Engineering Economy course by making it relevant for today's issues and make it available to the states & MPO's.	Investigate use of LCCA analysis to determine if it meets state and local need.

State	How should these requirements be implemented at the federal level	How should these requirements be implemented at the state and MPO level
Minnesota	Encourage States and MPOs to explore, share information and apply LCCA.	Consider using LCCA where it can help.
Mississippi	Mississippi Department of Transportation will work with the local FHWA office to develop LCCA procedures.	State (MDOT) and MPO committees will discuss LCCA procedures.
Missouri	At the federal level, consideration of LCCA is mandated. However, the mandate requires cooperation and coordination between the States and the MPO and we feel that the federal role should be limited in nature and allow maximum flexibility between those two groups.	It should be emphasized that LCCA is but one of many considerations in the planning process at either state or MPO level and should be viewed specifically as tools, not overriding factors.
New Hampshire	Due to the acknowledged difficulties in the application of these procedures, the requirements for implementation should stress reasonableness. Good faith efforts by State must be acknowledged.	State and MPO planning process should be developed cooperatively including the development of LCCA procedures.
New Jersey	Need to develop definitive guidelines on acceptable procedures.	
New York	Re-pavements: At this time we have no views on how these specific requirements should implemented. Re-Bridge: The FHWA should either develop an optimization process for all States to use when spending Federal dollars or allow the states to develop their own based on their best approach.	Re-pavements: Start with considering LCCA for treatment selection. Re-bridges: Each state should develop an optimization process in conjunction with local and MPO input.
North Carolina		Could be used to investigate modal choice questions like fixed guideways vs. highway improvement. AASHTO could be helpful in providing case studies in this area.
North Dakota	Approve state process	Project & System level: should include project features such as lighting, pvmt, etc. Should also be used to weigh one alternate over another such as: to grade separate 2 facilities or not, bus rehab. vs. new purchase, one way pair vs. widening, etc.
Oklahoma	FHWA must consider the many variations between states in regard to pavement LCCA. Unless all states maintain the same required elements to drive a LCCA process and provide data within specific tolerances a LCCA at the Federal level will be useless.	States and MPO's should be allowed to generate their own LCCA. User cost can be more defined on smaller systems.
Oregon	One of the problems is user costs. Uniform user costs have to be developed, or a center where these costs can be obtained.	The States and MPO's have to be committed to using LCCA which means that databases have to be developed.

State	How should these requirements be implemented at the federal level	How should these requirements be implemented at the state and MPO level
Pennsylvania	It is not clear at present what the extent of FHWA involvement will be in the planning and programming process as it relates to LCCA. It is our opinion that US DOT should help establish LCCA or "Life Cycle Standards" which State DOTs and MPOs can apply to their planning and programming process. These standards should cover all modes and types of facilities, services and equipment. This intermodal approach would necessitate the provision of training in LCCA procedures and standards to all affected agencies such as State planners, MPOs, mode managers/operators, etc.	The emphasis placed on maintenance and preservation of existing facilities and services makes it important for State planners and MPOs to place an increased focus on LCCA processes in STIP/TIP development. Again this increase emphasis must be supported by requisite training. Further, the State's interaction with the MPOs must be defined in items of the LCCA roles and responsibilities required in the planning process.
South Carolina	The planning process has been completed before one gets to the "Design & Engineering of" process.	
South Dakota	The federal level should not implement them. Leave that to states and local governments	
Tennessee	No opinion.	No opinion.
Texas	Many states have in-place systems and procedures that give some consideration to LCCA. Perhaps consideration should be given to using the existing systems without requiring the states to completely start over with new systems.	LCCA can be used in ranking projects for "total" cost at state and MPO level.
Utah	Insure the LCCA is only one of many tools incorporated in the decision process. The LCCA should not be the only criterion for decision making. Other factors such sa continuity, engineering judgement, public desires, and environmental constraints all need to be considered in the process.	Implement a single standard LCCA procedure for all entities in the State. Ensure adequate training and use of the LCCA tool. Consistency at the State level is more important than detailed accuracy.
Virginia	Federal level should encourage that the forecasting of expenditures are related to design and material options under consideration.	At the state and local level, a life cycle analysis system must be geared to the entirety of the locality as opposed to a point specific situation must be dealt with, to one degree or another, but unless the specific situation becomes predominate, the LCCA is not to be adjusted for them. Overall, it is to budget for future maintenance and improvement needs based on anticipated costs in a logical and economic fashion.
West Virginia	To evaluate the capital cost element of proposed projects keeping in mind that this is only a portion of the economic effects and must be considered along with environmental and social effects as well.	
Wisconsin	Emphasize LCCA at the project level and B/C at the	LCCA or B/C should be part of all project evaluations

State	How should these requirements be implemented at the federal level	How should these requirements be implemented at the state and MPO level
	project and program levels.	performed duties the development of state and MPO programs.

Question 17: What assistance from FHWA, if any, would be helpful in fostering more use of LCCA procedures in your department (1) program incentives: (2) technical assistance; (3) revised or improved federal aid procedures; (4) other (please describe)?

Responses:

State	Program incentives	Technical assistance	Revised or improved federal-aid procedures	Other
Alabama	Yes	Yes	Yes	
Arizona	No	Yes	Yes	
Arkansas	Yes	Yes	No	
California	Yes	Yes	Yes	See # 16
Delaware	No	Yes	No	Provide training for those who are going to be involved in using LCCA procedures.
Florida	Yes	Yes	Yes	Development if simple technical manuals, data, software, and analysis standards is a necessity.
Illinois	Yes	Yes	No	
Indiana	No	Yes	Yes	
Iowa	No	Yes	No	
Kansas	No	Yes	No	
Kentucky	No	Yes	No	
Louisiana	Yes	Yes	Yes	We need incentives for policy makers to select the most cost effective rather than the most politically expedient project many times at the local level.
Maryland	No	Yes	No	
Michigan	No	No	No	
Minnesota	No	No	No	Information
Mississippi	Yes	Yes	Yes	
Missouri	No	No	No	
Nebraska	No	No	No	
Nevada	Yes	No	No	FHWA program that would provide a program

State	Program incentives	Technical assistance	Revised or improved federal-aid procedures	Other
New Hampshire	No	No	Yes	
New Jersey	Yes	Yes	Yes	Guidelines and reference tables.
New York	No	Yes	No	
North Carolina	No	Yes	Yes	Case studies in appropriate areas.
North Dakota	No	No	No	Update research on user costs & maintenance costs.
Ohio	No	No	No	
Oklahoma	Yes	Yes	No	Technical Programs
Oregon	Yes	Yes	Yes	
Pennsylvania	Yes	Yes	Yes	
South Carolina	No	Yes	No	
South Dakota	No	Yes	No	
Tennessee	No	Yes	No	
Texas	No	Yes	Yes	
Utah	No	Yes	No	No more Federal rules and dictates. Allow state flexibility.
Vermont	No	Yes	Yes	Case studies of actual field practice
Virginia	Yes	Yes	No	
Washington State	No	Yes	No	
West Virginia	No	Yes	No	
Wisconsin	Yes	No	No	
Total	**14**	**29**	**14**	

Question 18: Please add any additional observations, comments or suggestions you would like to make with respect to LCCA.

Responses:

State	Additional observations, comments or suggestions
Arizona	LCCA is a technical tool and should be restricted to trade-off analysis among technical alternatives.
California	What happens if Sec. 1024 and 1025 requirements for LCCA are not met? Probably nothing. Planners and engineers can point out the ISTEA requirement saying that LCCA should only be "considered". They will respond that they did consider it, but decided against doing it. If easy to use methods are available and the necessary training is provided, we can hope to see more objective transportation decision making to take place in the future. NOTE: Please note the upcoming HR2490 and Rep. Bob Carr's requirements for transportation economic analysis. (Copy Attached).
Delaware	The department is in the process of incorporating LCCA capability into the existing Pavement Management and Planning (PMAP) software to assist in the development of a pavement type selection process as required by FHWA
Florida	To reiterate: LCCA is a useful tool, with a number of limitations. As such, it does provide useful, though incomplete, information. LCCA (or any other planning factor) should not be used by U.S. DOT to disqualify or to "second - guess" local project selection.
Illinois	None
Iowa	LCCA, as stated before, is only a special case of benefit-cost analysis. LCCA is nothing more than calculating present worth of a stream of expenditures related to the project over a given period (life). By doing this, one can identify the least present worth alternative. In certain types of projects, that is a useful piece of information that leads t the best investment decision. However, in many more types of projects, there is also a stream of benefits over the life and these also need to be considered (i.e., B/C analysis). What is needed is the identification of the most appropriate types of projects where LCCA is most useful and those are project types where the stream of benefits are the same or equal.
Kansas	LCCA should be regarded as a tool to aid in programs or project analysis. Many other factors (including those in sections 1024 and 1025) must also be considered. Managers should be aware of the limitations of the procedure including accuracy and availability of data and sensitivity to discount rates and user costs.
Missouri	We would re-emphasize that LCCA is a tool whose accuracy and dependability vary greatly. It should certainly be considered, but not viewed as an absolute determining factor.
North Dakota	Use of LCCA should still allow for engineering judgement and program management to make final decisions.
Ohio	It is important to understand the limitations of LCCA as it applies to the highway industry. Prediction of pavement performance and appropriate future rehabilitation strategies is a not an exact science.
Oklahoma	If life cycle costing is going to be "required" consideration in pavement management and design, then the states and FHWA administrative people need to step aside and let the technical support in these agencies work out the details.
Oregon	LCCA is one half of the benefit/cost analysis. Its use is limited to those projects where the alternatives have the same quantifiable benefits. The problem with LCCA is that if costs are the only basis for making comprehensive choices, then many projects may fall by the wayside. These may be projects which have high costs but also bring in many benefits.
Pennsylvania	To be of maximum value the LCCA should be supported by an extensive and well maintained data base. The LCCA becomes increasingly more subjective

State	Additional observations, comments or suggestions
	when not supported by current empirical data, which can lessen the value of the process.
Tennessee	None.
Texas	None.
Utah	LCCA is a valid economic analysis technique. It must not become, as cost/benefit became, the sole criteria for action determination. It must be considered with all other analytical tools.
Virginia	Intangibles such as personal knowledge of performance and investment histories, working knowledge of a program and its parameter requirements/limitations, and intuition (professional judgement and forecasts of the future) should be recognized as necessary components of a life cycle cost analysis system.
Washington	Since LCCA has not been used to any great extent to date, the benefits in using it will not be realized in the near or mid term. Techniques for economic evaluation will change and in the long term that will change the needs that are addressed, at least the order in which they are addressed. Because the optimum time to perform many preservation actions are long since past due to inadequate funding, the LCCA prescribed actions will be overridden by "must do" rather than "should do" actions for some time. A considerable transition period will be needed from "use available funding to do worst first based on factual needs assessments" to the "least cost regression analysis for optimizing project selections" policy
West Virginia	The primary danger is that LCCA will assume an importance in the decision making process that is unwarranted. Even at its most refined and accurate, it is but one of many factors which must be considered by the professional and administrator. It must not be allowed to assume a life of its own.

STATEMENT OF J. DOUGLAS HARTLEY

Executive Director
West Virginia Public Transit Association (WVPTA)
Charleston, West Virginia

on behalf of

Community Transportation Association of America (CTAA)

Before the

Subcommittee on Investigation and Oversight
Committee on Public Works and Transportation

April 21, 1994

Mr. Chairman and Members of the Committee, my name is J. Douglas Hartley. I am the Executive Director of the West Virginia Public Transit Association (WVPTA). Today I am testifying not only as a representative of the transit community in West Virginia, but as one of the hundreds of small urban and rural transportation providers throughout our nation representing the Community Transportation Association of America (CTAA).

As a staff member of the Kanawha Valley Regional Transportation Authority (KVRTA), West Virginia's largest transit property that serves our state capital and is funded under Section 9 of the Federal Transit Act, I see daily the effects of the decisions and policy that are made in Washington by the Congress, the President, and the Federal Transit Administration. It is an honor for me and the state transit association that I represent to participate in that process today.

As I was preparing my testimony concerning the nation's transit infrastructure, I looked back at the past 12 years and realized that rural and small urban transportation providers face more challenges today than ever. Just a few examples include: 1) the American's with Disabilities Act; 2) the Clean Air Act; 3) FTA's new Drug and Alcohol Testing Regulations; 4) ICC insurance requirements; 5) an aging vehicle fleet; 6) increased demand for services, and 7) perhaps most importantly, the federal deficit.

The transit community is quite aware of the increased competition for federal funding, it is a battle we have fought for the past 10 years, however, the toll has been great. In many of our communities, the transit infrastructure has suffered. Providers have had to make difficult decisions between infrastructure needs and levels of service. Unfortunately, our industry is faced with the proverbial "Catch 22", should we spend our limited dollars on new vehicles and cut service levels, or do we continue service with worn out equipment that costs more to maintain and operate. Either way our constituents suffer.

Our nation cheered the passage of ISTEA two years ago. This past year's federal funding level was a great start for the revitalization of transit and our country's transportation infrastructure. However, this year's funding proposal by the President unfortunately "robs Peter to pay Paul" by cutting operating assistance to fund additional capital programs. If transit is to survive in smaller urban areas and rural America, you must look at the effects of the decisions and policy not only in how they effect our nation's largest cities, but in how they effect Charleston, Huntington and Petersburg, WV, State College, PA, Blacksburg, VA and the hundreds of smaller communities across America. Smaller systems depend on federal and state funding for both operating and capital needs. We cannot negate the effects of cuts in federal operating assistance by token increases in capital assistance, nor can we afford to neglect our infrastructure needs any longer. We are faced with a dilemma, how do we proceed? Where do we go? How can we fully fund transit and cut the deficit?

These are tough questions with no easy answers. Whatever we do, maintaining the status quo would only do more harm than good. We must move forward. If we work together, I hope we can find some opportunities to improve our ability to provide safe, efficient, affordable transportation to our nation's citizens.

I would like to review several proposals that the WVPTA and CTAA feel will assist us in meeting that goal. I should add that the Division of Public Transit of the West Virginia Department of Transportation has reviewed these specific proposals and fully endorses them.

OPERATING ASSISTANCE FLEXIBILITY IN SMALLER URBANIZED AREAS

While fully funding mass transit at the levels authorized by ISTEA would be the ultimate step forward in solving our infrastructure needs, flexibility of Section 9 funds for providers under 200,000 population levels would at least start the journey. The ability to allow small urban systems the option of using their limited allocations for either operating or capital expenditures would allow local decision makers the ability to maximize their resources in the areas of greatest needs.

The Federal Transit Act currently places a "cap" on the amount of Section 9 formula funds that can be used for operating assistance purposes. By comparison, Section 18 formula assistance in rural areas can be used flexibly in meeting actual capital and operating needs.

The current cap on operating assistance has an unfair impact on public transit systems in urbanized areas with less than 200,000 population because it fails to recognize the relative dependence of different sized transit agencies on federal assistance. For example, FTA's own published figures show that for the largest transit systems, those serving metropolitan areas of 1 million or more, federal operating assistance accounts for less that 5% of their total operating budgets. By comparison, smaller urban transit systems are five times more dependent and rural systems are more than seven times more dependent.

The proposal to lift the current cap on smaller urbanized areas would have a minimal effect on federal outlays. For example, only 17.5% of current federal operating funds are allocated to smaller urbanized areas nationwide.

MODIFYING CHARTER RESTRICTIONS FOR SMALLER TRANSIT SYSTEM

Current policies prohibit the use of FTA assistance to carry out even incidental charter services. The charter regulations are a perfect example of a major city/large transit urban system problem dictating policy without regard to the effects on small systems. The charter regulations, in large part, are a result of large urban systems directly competing with private charter operators. In that regard, the regulations have had a positive effect in protecting the private operators' interests. In West Virginia and elsewhere in rural America, the regulation has denied service to many church groups, school children and other citizens.

For example in Charleston, the transit authority operates three vintage trolley streetcars that if a private tour operator in Virginia says they are a "willing and able" provider cannot be chartered for local events or by local citizens for wedding receptions, company outings, etc.

Transit systems in West Virginia do not wish to compete with private tour operators. We do, however, want to serve our communities and would like to be able to provide incidental charter service within 50 to 75 miles of our service areas, as long as it does not interfere with our regular transit service. Transit operators in West Virginia do not want to provide overnight charter service. By granting small systems relief from this regulation it would allow them to better serve their communities and generate revenue that can be put into their systems without harming local private tour operators.

TRANSPORTING PASSENGERS ACROSS STATE LINES

In many smaller urban areas and rural communities today, the nearest health services and medical facilities area located in another state. Many community hospitals and related services centers have closed in rural areas making travel to regional facilities in adjoining states a necessity.

In West virginia, several transit systems operate in this environment. For example, the Potomac Valley Transportation Authority (PVTA), a Section 18 system operating in Petersburg, WV must provide service to both Virginia and Maryland for its passengers to receive adequate medical services. Due to the Interstate Commerce Commission (ICC) requirement that a minimum of $5 million in liability coverage be carried, PVTA's annual insurance costs have been increased by approximately $16,000.

This ICC requirement, born under the Bus Regulatory Act of 1982 (BRRA) is unnecessary and clearly goes beyond the intent of the BRRA which exempts public agencies and units of local governments. It is clear that Congress intended the BRRA to apply to commercial bus transportation engaged in interstate commerce and the legislative history of the BRRA shows that the congressional concern was primarily for the safety of commercial buses.

However, the minimum insurance requirements established by the ICC have been extended to all public transit systems, other than those operated by local government. This includes about two-thirds of the rural transit agencies receiving FTA funds through their respective state Departments of Transportation -- even though these local agencies are not engaged in interstate commerce and already meet state insurance and safety requirements. As a result, many smaller community agencies have been forced to suspend transporting passengers across state lines due to their inability to obtain the additional insurance coverage or because of the excessive costs of such coverage.

Therefore, were propose that transportation providers funded under Section 9, 16 or 18 of the Federal Transit Act be exempt from this requirement.

FUNDING FOR RTAP

As David Raphael mentioned in his testimony, the Rural Transit Assistance Program (Section 18(h)) was added to the Federal Transit Act in 1987, with its own authorized funding level of $5 million. This modest initiative has been enormously successful in providing needed technical support to rural transit operators.

A unique problem arose when the funding formula for RTAP was changed by the passage of ISTEA of 1991. ISTEA provides that Section 18(h) is to receive 5% of the 3% of all funds made available to FTA for planning and research. In short, the intent was to authorize funding for RTAP equivalent to 0.15% of all FTA funds and to allow RTAP funding to rise in proportion to overall transit funding increases.

Had the full 0.15% principal been followed, RTAP would have received $5.2 million in FY'92, $5.3 million in FY'93 and $6.5 million in fiscal '94. In actually, RTAP funding has declined.

The reason for the funding shortfall is that, since the passage of ISTEA, Congress has not funded the full 3% set-aside for FTA planning and research activities, but instead, has earmarked a smaller amount for those activities. For example, in FY'93, only $85 million was appropriated for research, and planning under Section 26, instead of the $104 million authorized under the ISTEA formula,

As a result, funding for RTAP suffers because of Congressional reluctance to fully fund other programs, not because of a reluctance to fully fund RTAP. The Administration's proposed transit budget for FY'95 continues this pattern, and would result in a further reduction of RTAP funds to a projected $4.6 million level. Because of the current linkage between RTAP funding and the main body of FTA's research programs, actual funding for RTAP will have declined significantly since ISTEA's passage, while Section 18 assistance in rural areas has increased by more than 60%.

It is our recommendation that Congress "uncouple" the RTAP program from other FTA research activities by adopting legislative language that would ensure that RTAP be funded at a level equivalent to 0.15 % of the total FTA budget.

REPEAL OF SECTION 18(i) INTERCITY BUS TRANSPORTATION

In 1991, the Federal Transit Act was amended to establish a new assistance program for intercity bus services in rural areas. Prior to the passage of ISTEA, intercity bus service was an eligible program expense under the Section 18 program, but funding of those activities was not mandated. Under the new Section 18(i) program, each state was required to set aside 15% of available rural transit assistance funds exclusively for intercity bus activities, unless the governor certified that intercity bus needs of the state were being adequately met.

Since its inception, only a portion of the funds earmarked for Section 18(i) projects has been used by states. The majority of intercity bus funds remain idle and unused because of lack of demand and complicated regulations, even though local rural transit needs have grown significantly in recent years. Many state DOTs now believe that the Section 18(i) program is unworkable and unneeded.

In fact, the Standing Committee on Public Transportation of the American Association of State Highway and Transportation Officials (AASHTO) has unanimously approved a resolution which calls for deleting Section 18(i) from the Federal Transit Act.

We join with AASHTO in urging that the current Section 18(i) program of Intercity Bus Transportation be substantially changed. It should either be repealed entirely, since states already have adequate authority to fund intercity bus services in rural areas, or the program should become discretionary rather than mandatory. A discretionary program would give the states the flexibility to design an intercity program that best addresses the needs of their respective states and determine the best use of their Section 18 funds.

Mr. Chairman, that concludes my testimony. We have tried to come here today and go beyond just raising questions or presenting you with problems. We have tried to present some practical solutions as well. In fact, the specific recommendations included in my testimony have been shared with each member of the West Virginia Congressional delegation and also presented to the Surface Transportation Subcommittee, which is considering amendments to ISTEA. We would welcome your support of these recommendations, and I would also be happy to try to answer any questions from members of the Subcommittee.

STATEMENT OF
GORDON J. LINTON
ADMINISTRATOR
FEDERAL TRANSIT ADMINISTRATION
UNITED STATES DEPARTMENT OF TRANSPORTATION

BEFORE THE
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
UNITED STATES HOUSE OF REPRESENTATIVES

APRIL 21, 1994

Mr. Chairman, members of the Committee, thank you for providing us this opportunity to appear before you to discuss transportation infrastructure needs. Let me begin by reiterating what Deputy Secretary Downey said in appearing before your initial hearing a few weeks ago, and commend you for holding this series of hearings to highlight the importance of infrastructure to the nation's well-being and to the quality of life for all Americans.

Let me also say, Mr. Chairman, that as a fellow Philadelphian I recognize the value and importance mass transit plays in urban areas, and I look forward to working with you and the members of this Committee to making sure that we do everything we can to meet the basic mobility needs of our citizens. This Committee certainly has played a critical part in this regard through its role in passing the Intermodal Surface Transportation Efficiency Act of 1991.

That landmark legislation provides that "... significant improvements in public transportation [are] necessary to achieve national goals for improved air quality, energy conservation, international competitiveness, and mobility for elderly persons, persons with disabilities, and economically disadvantaged persons in urban and rural areas of the country."

In the context of that mandate, Mr. Chairman, I will respond to the issues dealing with transit infrastructure needs you have asked us to address. But first let me say a few words about transit infrastructure in light of the recent Los Angeles earthquake, a matter I testified about before the full Committee at a field hearing in Los Angeles just last week. The news is good. For example, there had been local concern about the structural integrity of the Red Line rail tunnel and its ability to withstand an earthquake. I walked that tunnel within forty-eight hours of the earthquake, and saw what a panel of experts subsequently concluded, that the tunnel performed as it was designed to. Indeed, service resumed on the rail line virtually within hours of the earthquake. Bus service was 94 percent operational on the day of the quake and 99 percent operational the next day. Finally, the Metrolink commuter rail system ridership increased significantly as a result of the earthquake.

Current and Future Infrastructure Needs

Let me now discuss transit needs, Mr. Chairman. Last year the Department submitted to Congress its biennial report on "The Status of the Nation's

Highways, Bridges, and Transit: Conditions and Performance." It was the first such report to formally combine highway and transit system information, and the transit portion was based on FTA's 1992 Transit Performance and Conditions report.

The 1992 report concluded that for mass transit to maintain its current condition and performance, plus meet new statutory obligations to serve disabled Americans and improve vehicular emissions, would require an annual capital expenditure of $3.9 billion per year. Of this amount, $3.1 billion would be needed annually to maintain current conditions and $0.8 billion would be needed annually to maintain current performance by increasing transit capacity consistent with recent growth in transit passenger miles.

The report further concluded that for mass transit to improve its condition and performance by eliminating the backlog of investment needs and expand its capabilities and increase its market share of urban travel by 25 percent over a 20-year period would require an additional $3.6 billion in capital investments each year, for a total of $7.5 billion a year. Of this amount, $2.1 billion would be needed annually to eliminate the backlog and $1.5 billion per year to increase market share.

Mr. Chairman, we have not yet completed our estimates of needs for the 1994 report, which we expect to submit to Congress this summer, but I can tell you that we anticipate that its numbers generally will be higher than those in the 1992 report. Among other things, we expect to estimate needs based on

scenarios in which both highway and transit performance are maintained and improved. FHWA estimates that a significant share of highway travel demand - 34,000 lane miles over 20 years - will have to be handled by transportation system management, transportation demand management, and transit, rather than highway construction. The transit estimates will reflect the need to improve our use of transit as a travel demand management tool.

We expect that the estimates to maintain the physical condition of the bus and rail facilities and equipment will be somewhat higher than was estimated in the 1992 report. This is primarily because of inflation, more recent data, and more complete treatment of the costs of replacing rail vehicles and meeting the Clean Air Act requirements. The costs of using alternative fuel buses to comply with the Clean Air Act Amendments were estimated but not included in the totals in the 1992 report and, based on the Energy Policy Act, will, at least partially, have to be included in the 1994 estimates. Our preliminary analysis indicates that the conditions of rail system facilities have improved somewhat recently so that our estimate of the rail facilities backlog should be reduced significantly. However, a more complete treatment of rail vehicle replacement and rehabilitation costs than was included in the Rail Modernization Study will partially offset this reduction. Overall, the cost to improve rail conditions should go down slightly.

Again, Mr. Chairman, these are preliminary observations only. The report that we submit to Congress will provide our definitive position on this matter, but

I did want to bring to your attention the fact that we anticipate higher estimates in the upcoming report.

The President's Fiscal Year 1995 Budget Proposal

I have talked about needs estimates; let me now discuss how the Clinton Administration intends to address those needs. At a time of fiscal austerity across the Federal Government, when Federal programs are being considered for elimination, we are pleased to report that our budget proposal represents the largest transit budget ever proposed to Congress, $4.8 billion.

Our budget proposal would increase Federal capital spending on transit from $2.87 billion as originally enacted in FY 1993, and $3.5 billion in FY 1994 to about $3.97 billion. This is an increase of four percent, or $179 million, over the current fiscal year, and an increase of twenty-five percent, or $962 million, over the budget the FTA was operating under in fiscal year 1993. Each transit system in the country will receive more Federal transit money than it did last year under our proposal. We have fulfilled our promise to fully fund our formula programs at the ISTEA authorized levels, and are requesting an increase of nineteen percent in Federal formula funds over last year for a total of $2.9 billion. These funds are used by communities largely to maintain or expand existing bus and rail systems, and to help comply with the Clean Air Act, the Americans with Disabilities Act, and other statutory requirements.

With State and local match, this will increase annual capital spending from about $5.1 billion in past years to $7.2 billion per year. This is enough to maintain conditions and performance as well as to improve conditions, as defined in our latest needs report.

The Federal capital program level will satisfy 53 percent of total needs as estimated in our 1992 report, versus only 38 percent at FY 1993 enacted levels. Assuming a level of funding equal to our fiscal year 1995 budget proposal in subsequent years, and taking into consideration the new ISTEA flexible funding provisions, we could make significant progress in eliminating the current $18 billion backlog in capital needs. For example, Federally assisted bus replacements would increase from about 2,000 per year to about 4,000 per year. With additional local match, buses would be replaced at a rate sufficient to reduce the backlog of 9,000 overage buses by over half by the end of 1998. This would bring the average fleet age down from over 8 to below 7, much closer to the desired level of 6 years old.

Our proposed program level would also permit rail systems to continue on the path of restoring all rail system facilities to a good state of repair within ten years as contained in our rail modernization study update report of August 1991.

Flexible Funding

There are other capital resources available to our grantees as well,

Mr. Chairman. From the perspective of the transit program, undoubtedly the most significant and innovative change mandated by the ISTEA is what we call the "flexible funding" provisions - the portions of the Federal highway and transit programs that have been freed up to allow decisionmakers at the State or local level to decide for themselves whether to allocate the funds to highway or transit projects. This flexibility at the local level has really begun to change profoundly the way in which transportation decisions are being made across the country. As State and local officials attempt to balance the competing needs and demands of clean air, congestion mitigation, the Americans with Disabilities Act, and the comprehensive Energy Policy Act of 1992, the flexible funding provisions provide resources to stimulate transportation solutions, not just highway or transit projects.

Specifically, Congress in ISTEA provides a potential $70 billion in flexible funding over six years for transit or highway projects. In fiscal year 1992 approximately $300 million was transferred for transit use, in fiscal year 1993 some $470 million has been transferred, and approximately $200 million has been transferred to date this year. In total, this represents close to $1 billion in additional capital funding for the transit program to address infrastructure needs.

State, Local, and Private Resources

Mr. Chairman, you have asked us to address the use of State, local, and private resources available for dealing with the revitalization of transit

infrastructure. The Federal role is but one part of the mix in terms of funding mass transit. State and local sources of funding will provide some $2.8 billion in capital funding for mass transit this fiscal year, and, of course, will continue to provide the majority of local operating costs, since at the Federal level we provide only some five percent of total annual operating costs. We recognize this critical role of non-Federal funding and, in fact, encourage areas to support mass transit with State and local resources. Under the ISTEA, for example, projects with local funding of two thirds or more of a project's cost are subject to fewer Federal requirements. And we encourage our grantees to use innovative financing techniques to stretch their resources to the maximum extent possible. Under our section 9 formula program, if a recipient can show that a lease would be more cost-effective than a purchase, that lease can be funded at the higher Federal share for capital projects, eighty percent. And our recipients continue to use bonding, leasing, joint development, and other innovative measures.

How to Facilitate Infrastructure Improvements

You have also asked us, Mr. Chairman, what can be done to facilitate infrastructure improvements. Let me briefly discuss some of the things we are doing in this area.

- Innovative financing options. We are working with the Secretary's office and FHWA in identifying innovative financing options available to the transportation industry.
- Expand use of flexible funding. As I noted earlier, the ISTEA flexible funding provisions are used more each year, and we expect the use of these funds to increase over the life of the ISTEA. We continue to have a number of outreach efforts in this area to make sure that State and local officials are aware of the funding options available to them. Our awareness efforts include regional conferences, meetings, and a document we publish each year that shows, on a State by State basis , what specific funds are available.

- New technologies. Breakthroughs in computers and communications and defense related technologies can help to increase highway and transit capacity and efficiency without major new highway expansion. Continued support will improve linkages between transit and other modes. For example, a number of our grantees are beginning to use global positioning system technologies to help in their fleet management. And technology also is useful for telecommuting purposes.

- Livable communities initiative. We also have a significant initiative in our budget proposal, Mr. Chairman, that I think could be quite useful in making

transit more attractive. Communities that are designed with a mix of employment, housing and retail nearby as well as within walking distance of transit stops can increase the number of trips made by mass transit, bicycles, and walking, thereby decreasing single occupant auto trips. Such modal shifts can decrease congestion, reduce air and noise pollution, and improve the general mobility and accessibility of our population. Locating housing near transit can decrease the need for second or third vehicles. We include in our fiscal year 1995 budget a proposal to use $30 million as supplemental funding for transit projects that fully involve the neighborhood, provide access to services such as daycare facilities and convenience stores at the transit facility, and encourage mixed use neighborhoods that include residential, commercial and office space. In short, the Livable Communities Initiative is designed to encourage land use, urban design and planning that embraces transit use.

- Congestion reduction strategies. Highway congestion is the most obvious example of the need to use technological breakthroughs and pricing in implementing demand management. ISTEA offers the opportunities to begin to implement congestion pricing.

- Transit Benefit. The Energy Policy Act of 1992 increased the transit tax-free benefit $60 a month and placed a cap of $155 per month on employer tax

benefit for parking. We are undertaking efforts to get the word out to employers to make them aware of this benefit, and to begin to level the playing field between the costs associated with driving as opposed to taking transit. We are proud of the fact that DOT was the first Federal agency to fully implement the Federal transit benefit program.

- Cash Out. As part of a strategy to reduce global warming, President Clinton has proposed requiring employers who provide subsidized parking to their employees to offer them instead a taxable cash allowance. This would make more explicit to these employees the cost of this parking and entice many to take cash instead, which can then be used for transit, carpools or van pools, or other alternatives to the single-occupant automobile.

Transit and Air Quality

Mr. Chairman, you asked us to address research studies that assess the effect of mass transit on air quality. Published reports over the last several years on the effectiveness of "transportation control measures" in reducing mobile source emissions have generally found that the measures have positive air quality effects, although very small benefits when considered in the context of total vehicular emissions produced in a large metropolitan area or region. Several of these studies have assessed transit improvements - ranging from increased subsidy of fares to new transit infrastructure like heavy- and light-rail

systems. In these studies, technological measures such as enhanced vehicle inspection/maintenance programs and clean fuel programs emerge as the most cost-effective air quality measures. This is not surprising considering the relatively small mode share for transit in most cities and the growing reliance on single-occupant vehicles nationwide, as revealed by the 1990 census data.

Unfortunately, in most studies the benefits of transit are confined only to the potential to reduce emissions. In reality, we do not undertake transit improvements solely for air quality benefit. If anything, this is an ancillary benefit of projects which are developed primarily to improve mobility and accessibility and support rational land use and urban development. These benefits are simply not considered in the studies which have assessed various transportation control measures on the basis of their capacity to reduce emissions.

We also believe, as was stated in the first DOT/EPA Report to Congress on progress in implementing the 1990 Clean Air Act Amendments, that transit can play a greater role as an effective air quality measure if new or enhanced service is put in place in conjunction with complementary measures which act as disincentives to single-occupant vehicle use. To date, there has been very little practical experience with these types of demand management measures. We believe, however, that over the next five years some polluted metropolitan areas may implement some of these strategies as they strive to meet Clean Air Act requirements. Transit will no doubt have a larger role to play in areas where limits on the use of the private automobile are being proposed.

Enhancing the Intergovernmental Partnership (E.O. 12875)

Finally, Mr. Chairman, you ask what we are doing to reduce the imposition of unfunded Federal mandates and minimize their effect on State and local infrastructure investment strategies, as called for by Executive Order 12875.

As I noted earlier, we have presented to Congress the largest transit budget in history, which clearly shows where the Clinton Administration stands on transit. Our intent is not to impose new requirements on our grantees but rather to try to minimize existing ones to the extent possible.

In addition, one of the first tasks I have undertaken as Administrator is a strategic planning effort involving all of FTA. We are focusing on what we can do to better serve our customers, local transit systems and current and potential system users. We are looking at a broad range of things we can do to minimize paperwork and better focus on the business of meeting the basic mobility needs of Americans. Among other things, we are considering how computers and electronic submissions could make life easier for our grantees as they apply for FTA funds and document their compliance with Federal requirements.

Conclusion

Mr. Chairman that concludes my testimony. Again, I look forward to working with you and the members of this Committee to making sure that transit meets the mobility needs of our citizens, and I think our budget submission

indicates our commitment to that goal. Thank you, and I would be pleased to answer any questions you may have.

ARTBA

Statement of

American Road & Transportation Builders Association

To

Subcommittee on Investigations & Oversight
Committee on Public Works & Transportation
U.S.House of Representatives
Washington, D.C.

April 21, 1994

Presented by
Eugene R. McCormick, P.E.
Senior Vice President
Parsons Brinckerhoff Quade & Douglas, Inc.
Washington, D.C.

Chairman
ARTBA Highways Advisory Council

1010 Massachusetts Ave., N.W., Washington, D.C. 20001

Testimony of
American Road & Transportation Builders Association
Before
Subcommittee on Investigations & Oversight
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Introduction

Mr. Chairman, Mr. Inhofe, members of the subcommittee. I am Eugene R. McCormick, senior vice president of Parsons Brinckerhoff Quade and Douglas, an international transportation engineering and design firm. I also serve as chairman of ARTBA's Highways Advisory Council, the group which develops our association's policies on highway matters, and the ARTBA Board of Directors. Prior to joining Parsons Brinckerhoff about a year ago, I was privileged to serve as Deputy Federal Highway Administrator. Before coming to Washington, I served as deputy secretary of the Illinois Department of Transportation. I have also been director of the Illinois DOT's Office of Planning and Programming.

Mr. Chairman, ARTBA was founded in 1902 and is the only national association devoted solely to the planning, construction and safe operation of transportation facilities of all types. Our association strongly believes that the federal government has a central role to play in developing a strong, efficient national transportation network and has worked for nearly a century to ensure that its programs are properly structured and adequately funded.

We commend the subcommittee for calling this series of hearings to review broad policy issues that determine the extent and effectiveness of federal surface transportation programs.

Highway & Bridge Needs

The condition of the nation's highways and bridges is well documented and well known, primarily through the attention given to the Department of Transportation's biennial report to Congress. The cost of correcting these deficiencies also has received widespread attention.

I will not go into detail on these matters except to emphasize that this nation is falling short by more than $15 billion a year in spending what it would take just to keep roads and bridges in their condition of two years ago. The cost of completely eliminating the identified backlog of needs is set by the Department of Transportation at $290 billion.

The cost of years of failure to provide adequate transportation investment is seen throughout the United States. For example, in each of the states represented by the leadership of this subcommittee, Pennsylvania and Oklahoma, 43 percent of the highway bridges are classified as "deficient" by the DOT.

Support for the National Highway System

Mr. Chairman, the highest priority in the allocation of available resources must be given to the National Highway System. When Congress created the NHS in the *Intermodal Surface Transportation Efficiency Act of 1991*, it intended the new system to be the primary focus of federal surface transportation investment now that the Interstate system is virtually completed. The Department of Transportation views the NHS as the backbone of the national transportation network.

Although it comprises only four percent of the nation's roads, the NHS will carry 40 percent of all highway traffic and 75 percent of heavy truck traffic. The NHS is the key to achieving the intermodal system Congress wanted in 1991 by providing connections with ports, airports, railroad stations, truck terminals, defense installations and our Canadian and Mexican partners in the North American Free Trade Agreement.

The 159,000-mile NHS will truly tie America together. It will not be a new Interstate system: three-quarters of the mileage is rural roads; many of them two-lane highways that will be improved but not expanded. Urban segments will be upgraded to improve vehicle movement and reduce air pollution.

ARTBA is greatly concerned that development of the NHS will be impaired by the flexibility provisions of ISTEA that permit funds allocated for the system to be used for other purposes. Much of the system is in need of major repair or replacement. ISTEA authorized about $6.5 billion a year for the NHS, including funds for maintenance of Interstate highways. Even though it is a substantial amount, it is clearly inadequate.

The Competitiveness Policy Council, through an analysis of Department of Transportation data, found that an investment of $66.3 billion is currently needed to improve just the bridges on the NHS. An additional expenditure of $145.4 billion is necessary to eliminate pavement deficiencies on the system over the next 15 years. Actually improving capacity and performance of the system to meet anticipated traffic demand would cost considerably more.

With every available dollar needed for the NHS, ARTBA has proposed to Congress that authority to shift authorized NHS funds to other categories be deleted from ISTEA.

The NHS is essential to the future strength of our national economy, and Congress must provide the funds that will enable it to fulfill the role which it has been assigned. ARTBA urges members of this committee to work for enactment this year of legislation designating NHS routes. Prompt action on the NHS bill, which has the endorsement of the U.S. Chamber of Commerce and the Competitiveness Policy Council, is essential.

In developing a new national highway network, attention must be focused on the continuing need to improve the safety of all highways. ARTBA fully supports the continuation and full funding of the Rail-Highway Grade Crossing and the Hazard Elimination highway safety construction programs.

Transportation Financing

Mr. Chairman, we are often told that, in the public sector, problems can't be corrected by "throwing money" at them. That may be accurate in many instances, and certainly efficiency and good management are essential for any activity. In providing a modern transportation system, however, there is no substitute for money. Without sufficient financial resources, all the efficiency in the world can't build a bridge, produce an airport runway or deliver a transit system. America will never have the transportation infrastructure it needs to be economically competitive until additional revenues are dedicated to that purpose.

That brings us to the question of financing transportation infrastructure in the future. For 38 years, the Highway Trust Fund has been a steady, reliable source of funds for the highway program and in recent years for transit activities. Unfortunately, changing conditions bring into question whether that funding mechanism, in its present form, will continue to be as reliable as it has in the past.

ARTBA continues to strongly support the use of federal motor fuel taxes only for transportation purposes. Furthermore, it believes that these user fees should be the foundation of any new transportation revenue mechanism. To that end, we advocate the transfer to the trust fund of the 4.3 cents-per-gallon of the federal gas tax that was enacted last year for deficit reduction.

In recent years, it has also become increasingly apparent that new sources of revenue for transportation capital expenditures must be explored. The pattern of growth in trust fund income has dramatically slowed. More fuel efficient vehicles and tax breaks for alternative fuels already are having an impact that will be more pronounced in the future. The development and use of vehicles not powered by petroleum-based fuels will exacerbate the situation.

Serious efforts are now under way to examine options for funding sources that will generate the increasing resources that will be needed in the future and provide the flexibility to respond to changing conditions, such as inflation, economic cycles, new vehicle use patterns and alternative fuels. While the Public Works and Transportation Committee does not have jurisdiction over taxes, this committee should take the lead in formulating financing proposals as it carries out its responsibilities for designing and authorizing transportation programs.

Several sources of revenue have been identified, most of which are another type of user fee. Modifications to the existing gas tax also should be considered, such as indexing the rate to adjust for changes in the inflation rate or patterns of vehicle usage. Some automatic adjustment is essential, especially if Congress continues to adopt multi-year authorization bills that give public authorities the ability to engage in long-term planning.

Lower tax rates for gasohol and other alternative fuels currently cost the Highway Trust Fund more than $500 million a year in lost revenue. These should be repealed immediately.

While serious explorations of new ways of financing transportation infrastructure are under way, ARTBA believes that program funding should continue to be largely based on the

motor fuels tax. Methods must be devised to apply an equivalent user fee rate to non-petroleum fuels.

To meet the priority needs of the National Highway System and other requirements, we endorse an increase in the federal motor fuels tax of 10-to-15 cents-per-gallon. An increased, indexed tax of this type can ensure that the United States can properly correct the deficiencies in its transportation infrastructure and meet emerging needs as they occur in the 21st century.

In recent years, ARTBA has commissioned nationwide public opinion polls that consistently show motorists will support a higher gas tax if it is used for highway improvements.

Support of Public-Private Partnerships

Mr. Chairman, there also are enormous opportunities to finance transportation infrastructure improvements by tapping the resources of the private sector. ISTEA, as the 1991 act is popularly known, provides new opportunities for private sector participation with state and local governments in the financing and developing of needed highway, bridge and tunnel improvements. The Act breaks with the past by allowing states to blend toll and traditional user fees providing a potentially significant source of additional financing.

The toll and public-private partnership provisions represent a bold and forward thinking departure from the status quo. Last year, however, the Public Works and Transportation Committee recognized that something more was needed to get this new phase of the nation's toll road program off the ground. The House last year approved changes to ISTEA to ease the participation of private entities in transportation development.

That legislation is now pending before the Senate and should be enacted to broaden the base of funding sources.

Support for a Capital Budget

There is yet another action that the Congress should take to bring stability to transportation funding, the enactment of a capital budget for the federal government. ARTBA commends a member of this subcommittee, Rep. Bob Wise, for his leadership in this area and for developing the capital budget proposal that was endorsed by the full committee last year.

The time has come to recognize that long-term investments in transportation facilities and other capital goods should be treated differently from annual expenditures for day-to-day operations of government. A capital budget, similar to that in many states, would enable the federal government to more rationally plan and finance programs and projects as investments that may be carried out over a number of years and yield benefits over a long period of time.

Highway Durability

Closely related to the financing of highway improvements is the way they are constructed to obtain the best return on the public's investment.

Recent, highly-publicized examinations of European road construction have brought attention to durability and the long-term cost effectiveness of longer lasting roads. In the effort to speed development of the Interstate system, our major highways were designed with a 20-year life span. While that policy brought more rapid construction, the nation now faces the need for costly reconstruction of many Interstate segments that have exceeded their design life.

There is no secret to building roads that will be productive for 40 or more years. Thicker bases, better foundation drainage and thicker surfaces can produce longer-lasting roads that require less expensive maintenance. The use of life-cycle cost analysis should be examined as a tool for evaluating the advantages of building highways with durability greater than under past practices.

ARTBA strongly believes that the advent of the National Highway System provides the opportunity to begin building more durable roadways. Congress should develop legislation requiring that any construction or reconstruction on the NHS be carried out under practices and specifications that, with proper maintenance, will result in a roadway life span of at least 40 years.

Thicker, more durable highways initially cost more to construct. The result, however, is less expensive maintenance and reduced need to close roads for repair or reconstruction.

While the experience of European nations in building more durable roads is instructive, ARTBA does not believe that a system of warranties or guarantees should be imposed on American contractors. Such a move has been proposed in legislation. These requirements are not applicable to the contracting process that is used in this country. Contractors should not be held responsible for the effect on highways of weather, traffic loads, highway design or other factors over which they have no control.

Mr. Chairman, it is clear from the scope of these hearings that the subcommittee recognizes the necessity for evaluating the practices of the past and exploring future opportunities if the United States is to develop and maintain the transportation system it needs to remain competitive in the rapidly growing world economy. You are undertaking this evaluation with ample time to assess your findings and develop recommendations before the committee must undertake the crucial reauthorization of the surface transportation programs.

Because of the breadth of your inquiry, I have attached to my testimony a copy of the ARTBA Highway Policy Statement, which states in detail our association's positions on a broad range of issues.

That concludes my prepared testimony. I would be happy to respond to any questions the subcommittee may have.

HIGHWAYS POLICY

Issue Background

Scope of the U.S. Highway Network

The United States has 3.9 million miles of roadway, of which 3.1 million are rural roads. Ninety five percent of all roads and streets in the U.S. are under the jurisdiction of state and local governments. Only 184,336 miles are under the jurisdiction of the federal government and includes roads in national forests and parks, and on military and Indian reservations.

Currently, about 57 percent of all roads and streets in the U.S. are paved, compared with about 23 percent in 1949. Total road and street mileage has increased approximately 17 percent since 1949. Paved mileage, however, has increased almost 200 percent.

Only 850,814 miles of roadway, 22 percent of the nation's total, are eligible to receive federal funding through the Federal-aid Highway Program. This mileage, however, carries 81 percent of total U.S. highway travel.

The 45,300-mile Interstate Highway System, initiated by Congress in 1956 and the largest public works project in history, is the backbone of the federal-aid system. Initial construction on the Interstate system is now virtually complete. The Interstate system accounts for just over one percent of the nation's total road mileage, but handles about 22 percent of the nation's total road travel.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) set in motion the framework for developing a strategic federal investment program designed to upgrade those existing highways and bridges that serve a national interest. The law directs the U.S. Secretary of Transportation to designate, in consultation with the states, a 155,000-mile "National Highway System" (NHS) which will serve as the focal point for future federal highway and bridge capital investments. (The designation can vary up to 15 percent above or below the 155,000-mile guide.) A national NHS map, developed in consultation with the states must be submitted to Congress by December 18, 1993. Congress must approve the NHS map by September 30, 1995, or funding for the system will expire.

The NHS will help focus future federal highway funding on international and Interstate routes, as well as on roads that serve major population centers, ports, airports, and international border crossings. While the NHS will include only 4 percent of the nation's existing highway mileage, it is the mileage that carries 40 percent of total vehicle-miles traveled in this country — including 80 percent of all tourist travel and 75 percent of all heavy truck travel.

Specifically, the NHS will include the 45,300-mile Interstate Highway System, existing major urban and rural arterials, the 15,000-mile defense strategic highway network, and strategic intermodal highway connectors. The NHS will reflect the major demographic and travel changes that have occurred in this country since the designation of the Interstate Highway System nearly 40 years ago.

Highway travel in the U.S. has increased as the population has grown, more women have entered the workplace, and jobs have been created outside of urban centers. Travel on the federal-aid system has risen approximately 40 percent since 1980. The greatest growth, over 60 percent, occurred on segments of the Interstate Highway System in urban areas. Travel on all roads and streets has increased more than 30 percent since 1980.

There are 165 million highway users — licensed drivers — in the U.S. They operate 189 million motor vehicles: 145 million automobiles and 44 million trucks and buses. Annual travel by motor vehicle has reached 2 trillion miles — approximately 11,000 miles per year, per vehicle.

Policy Statement

The personal motor vehicle (automobile, light truck, van and motorcycle) is the predominant form of personal transportation in the U.S. Privately owned vehicles account for 86 percent of all personal travel. By way of comparison, air transportation (commercial and general aviation) accounts for approximately 9 percent of personal travel; public transit accounts for less than 3 percent.

Highways and the U.S. Economy

There is a strong relationship between the Nation's economy and travel on the Nation's highway system. Since the 1930s, growth in the Gross National Product (GNP) and vehicle-miles of travel (VMT) reflect strikingly similar patterns (with the exception of the World War II years). Since the early 1980s, VMT has grown at a slightly higher rate than the GNP.

The efficient movement of food, raw materials and manufactured products from place of origin to export facilities is key to America's competitiveness in the world marketplace. With a land area of 3.6 million square miles, however, we face transportation challenges unique among the world's economically developed nations. For example, according to the U.S. Department of Transportation, the average freight trip by truck in the U.S. is almost 400 miles in length.

Road transportation accounts for 15 percent of U.S. Gross National Product and 84 percent of all U.S. spending on transportation. In 1990, trucks handled slightly more than 25 percent of all U.S. freight-ton miles — up from 22 percent a decade earlier. Obviously, a very significant portion of the cost of U.S. goods is directly related to the cost of highway transport. To improve U.S. competitiveness, a high quality national highway and bridge network is essential.

After housing (31 percent), transportation (almost 19 percent) accounts for the largest single household expenditure. Sixty-four percent of transportation expenditures at the household level are for personal vehicles, gas and oil.

According to U.S. Department of Transportation, highways in poor condition cost users as much as 25-30 percent more per mile than highways in good condition. And every one percent increase in highway user costs adds about $15 billion to the nation's total highway bill, including increased vehicle depreciation and maintenance, fuel, oil, and tire consumption.

In 1989, traffic congestion due to inadequate capacity introduced over 8 billion hours of delay on the Interstate Highway System and other principal arterials, compared to uncongested conditions, adding billions in costs to interstate commerce. In the nation's 39 largest metropolitan areas, the cost of congestion, including costs for delay and fuel consumption, was estimated to be over $34 billion in 1988.

Highway and Bridge Conditions & Capital Investment Requirements

The U.S. Department of Transportation (DOT) is required by law to prepare a report for Congress every two years that details the condition and capital investment requirements of the U.S. highway and bridge network. The last report was issued in January 1993. It found:

- Approximately 234,500 miles of U.S. highway are in "poor" or "mediocre" condition and need repair. The current cost to eliminate existing "backlog" highway pavement deficiencies and feasible capacity deficiencies is $212 billion.
- Approximately 118,500 U.S. bridges are "structurally deficient." The current cost to eliminate existing backlog bridge deficiencies is $78 billion.
- In 1991, total capital investment in highways and bridges by all levels of government was $36.1 billion.
- Just maintaining current highway and bridge conditions would require an average annual capital investment of $51.6 billion — $15.5 billion above the actual 1991 investment level.
- Actually improving current conditions and performance will require an average annual capital investment of $67.3 billion through 2011 — $31.2 billion above the actual 1991 investment level.

Objectives Guiding Development of the ARTBA Highway Policy

The American Road & Transportation Builders Association believes the U.S. highway program must emphasize the following objectives:

- Highway capital improvements should be financed primarily through the collection of highway user fees. These fees, which should be imposed by government, must be raised as necessary to provide a continuing source of funding for the highway program.
- Safety must be of paramount concern in the design, construction, maintenance and traffic operations of the nation's highway system.
- Critically deficient bridges should be repaired or replaced. Improved rideability and pavement durability should be program goals.
- The capacity and efficiency of the highway system should be improved as necessary to meet public demand.

ARTBA Policy: Highway Financing issues

Support of the User Fee Concept

ARTBA believes the cost of building and maintaining highway infrastructure should be borne primarily by highway users through the imposition of dedicated fees, excises, and tolls. Americans realize that greater investments in highways and bridges are needed to keep them safe and efficient. And opinion research shows that a solid majority support dedicated increases in highway user fees for these purposes.

In light of documented, unmet surface transportation needs, highway user fee revenue should only be used to finance highway, bridge and mass transit infrastructure capital improvements.

Permanent Extension of the Highway Trust Fund

There will always be a need for federal investment in the nation's highway and bridge system. ARTBA supports permanent extension of the federal Highway Trust Fund — and funding mechanisms to support it — to ensure that adequate financial resources are available to meet the federal role.

Increasing Motor Fuels Taxes to Meet Highway Capital Needs

ARTBA supports a 10 to 15 cents-per-gallon increase in the federal motor fuels tax, dedicated to the Highway Trust Fund, to finance highway and bridge capital improvements on the federal-aid system. This action is necessary to raise the amount of revenue that the U.S. Department of Transportation reports is needed just "to maintain existing conditions" on the system. State and local governments should increase their motor fuel taxes to the level necessary to fully participate in the federal-aid program.

Indexing Highway User Fees

ARTBA urges all levels of government to seriously consider indexing highway user fees — including motor fuels excises — to the Consumer Price Index to assure that these fees rise commensurate with increases in inflation. This action would help preserve the purchasing power of the highway and bridge improvement program.

Equal Taxation of Highway Use Energy

ARTBA believes all energy sources utilized to power vehicles that use the nation's highway and bridge system should be taxed to pay for system improvements through the Federal-aid Highway Program. The excise should be at least equivalent to that currently levied on gasoline.

Energy Efficient Vehicles

ARTBA encourages the development and use of more energy efficient highway vehicles. We caution, however, that there is a direct relationship between fuel efficiency and highway user fee collections. As the nation's highway vehicle fleet becomes more energy efficient, highway user fees must be appropriately adjusted upward to ensure that the revenue stream necessary for highway and bridge improvements is not compromised.

Highway Funding Sanctions

ARTBA opposes the concept of linking the availability of federal highway funding to state and local government compliance with federal mandates of any sort.

Minimum Allocation to States

ARTBA believes the federal government should guarantee that each state will receive back — in the form of federal highway funding — at least 90 percent of the highway user fee revenue that it sends to the federal government.

Authorizations & Appropriations

ARTBA believes Congressional authorizations for the Federal-aid Highway Program should be set at a level that will ensure full and timely utilization of all revenues collected for the Highway Trust Fund plus interest income earned on investment of the trust fund balance. The annual obligation for the highway program should at least match the authorization level established by Congress.

Consistent and predictable federal funding is essential to operating orderly and cost-effective state highway improvement programs.

Capital Budgeting

ARTBA urges the federal government to adopt a capital budget that differentiates between federal capital investments in public infrastructure and the general day-to-day operating expenses of government. This accounting procedure is used by most state governments and many other nations. Such an action would help ensure that highway user revenue is not impounded and that artificial spending ceilings are not placed on the user-supported "pay-as-you-go" federal highway program.

In the least, since the highway program is self-sustaining and is not responsible for deficit spending, it should be separated from the federal unified budget and exempted from any general spending caps or other "across-the-board" deficit reduction measures enacted by Congress or the Executive Branch.

Toll Facilities

The Intermodal Surface Transportation Efficiency Act of 1991 allows the use of federal funds in the development of privately-owned toll facilities. ARTBA believes state transportation agencies should also be permitted to use federal funds to develop new toll highways. The toll road demonstration provision of the *Surface Transportation and Uniform Relocation Act of 1987* (Section 120) was a first step in this direction.

ARTBA also believes:

- The U.S. Secretary of Transportation should be granted the authority to allow the imposition of tolls on existing federal-aid highways that have unusually high maintenance, construction or reconstruction costs. The purpose of this action would be to allow states to use the toll revenue realized to repay bonds issued to finance these improvements.
- When federal funds are used to finance the acquisition, construction, or reconstruction of a new or existing toll facility, states should be under no obligation to repay the federal funds so used, or to remove the toll once the non-federal costs have been recovered.
- Toll revenue generated in excess of the amount necessary to operate and maintain a facility should only be used for transportation-related purposes.
- Privately operated toll highways may be a viable means of meeting increased traffic demands in some areas.

Alternate Financing Methods

ARTBA believes the imposition of motor fuel excises at the federal, state and local levels should continue to serve as the primary funding mechanism for highway and bridge improvement programs. Recognizing the enormous cost associated with meeting highway capital needs, however, other "non-traditional" funding mechanisms should be considered for use when appropriate to supplement motor fuels excise revenue. These could include — although are not limited to — expanded use of toll highways and bridges, public-private ventures, and creation of other financing mechanisms like infrastructure banks and revolving loan funds. These mechanisms should not be advanced for the purpose of reducing existing levels of highway user taxes, avoiding necessary increases in highway user fees, or diverting highway user generated revenue to non-highway uses.

Public-Private Ventures

While public financing is ARTBA's preferred method of funding transportation infrastructure improvements and operation, we recognize that private investment is also necessary if the nation is to meet its transportation capital needs. ARTBA believes the public interest can be served well through public-private ventures or partnerships in transportation development. ARTBA further believes that public-private ventures should be structured so that each sector provides what it can most effectively contribute. Such recognition of expertise should maximize project success and protect all applicable public interests.

In support of these pursuits, we recommend:

- Federal and state transportation agencies should be encouraged to develop and fund proposals for using a public-private venture approach to construction, improving and operating highway transportation projects when public funding is inadequate or not available for such projects.

Policy Statement

- When federal or other public funding is involved, public-private venture projects should be constructed in cooperation with applicable federal and state transportation agencies and in accordance with all relevant laws, including those applicable to competitive bidding for construction contracts.

- Federal funds should be permitted to be used as loans or matching funds for all public-private venture transportation projects with a dedicated revenue source. Federal/state revolving loan funds should be established to underwrite predevelopment and development phases for the construction and improvement of transportation facilities. Furthermore, independently operated federal and state revolving loan funds should be considered to provide subordinated capital and other credit enhancements to facilitate the sale of revenue generating projects' senior debt in capital markets.

- Appropriate types of tax incentives, such as arbitrage relief, public benefit bonds (which would be suitable investments for 401(k) and other employee benefit plans), private activity bonds, and volume cap flexibility should be considered to facilitate the private financing of private and public-private federal-aid transportation infrastructure projects.

Highway User Fee Exemptions

To assure equity in taxation and maximize receipts to transportation trust funds so that highway capital needs can be met, ARTBA urges all levels of government to eliminate exemptions from the motor fuel excise and other highway user fees.

ARTBA Policy: Federal-aid Highway Program Issues

The Role of the Federal Government

ARTBA believes the federal government has a major role to play in the development and maintenance of an efficient national highway and bridge network for the following reasons:

- The vast majority of Americans and U.S. businesses choose to use motor vehicles as their preferred means of transportation.

- The *U.S. Constitution* empowers the Congress to regulate commerce among the states and with other nations. A national, coordinated system of well-maintained highways and bridges with intermodal linkages must exist in support of interstate commerce and commercial export.

- The *Constitution* also requires the federal government to provide for the national defense. To meet this responsibility, the federal government should ensure that efficient transportation facilities are available to expedite emergency military and industrial mobilizations and support civil defense needs and activities.

- The efficient movement of people and commercial goods across state lines is key to sustaining a strong national economy and maintaining a high quality of life for all Americans.

- Highway safety is major national public health issue.

For these reasons, ARTBA believes the federal role should include adequate provision of financial, technical and research assistance to the states for highways and bridges. Working in full cooperation with the states, the federal government should also assume the lead role in developing and promoting uniform standards and guidelines for highway and bridge design, maintenance and operations.

Consistent and predictable federal funding is essential to operating orderly and cost-effective state highway improvement programs.

The Role of State and Local Governments

State and local governments are the owners and managers of the nation's highway and bridge network. ARTBA believes:

- States should be responsible for project planning, management, and environmental analysis and should assume partial responsibility for financing development of a uniform, nationally coordinated highway system.

- Once a federally-assisted highway or bridge has been constructed, states should have lead responsibility for maintaining them in good, safe condition.

- Highway durability and safety should be top priorities for the states. In pursuit of these goals, states should make every effort to incorporate state-of-the-art design standards and products in their highway and bridge plans.

Joint Federal-State-Local Responsibilities

The highway improvement program must operate as a true partnership between the federal, state and local governments to best serve national interests and user/financial supporters. All levels of government must diligently monitor transportation improvement needs and continue to dedicate motor fuel excise revenue to highway improvements.

Competitive Bidding System

The practice of awarding highway construction contracts to the lowest responsible bidder in open competition with other interested and eligible firms has helped ensure integrity in the bidding process. It has also saved taxpayers hundreds of millions of dollars. ARTBA staunchly supports the free enterprise system of open competitive bidding for highway projects.

Qualifications-Based Selection

ARTBA believes contracts between project owners and planning/design consulting engineers should be procured by qualifications-based selection procedures to assure state-of-the-art, high-quality planning and design.

Highway Safety

ARTBA believes that building safety into the highway system should be a top priority of transportation policymakers, planners and appropriators at all levels of government. More than 39,000 people were killed in motor vehicle accidents on U.S. roads during 1992. Highway-related deaths and injuries cost American society an estimated $137 billion per year. Clearly, highway safety should be a paramount public health interest.

The good news is that experience has proved that emphasizing safety features in the design, construction, reconstruction and operation of highway facilities does save lives. The U.S. highway fatality rate has dropped 60 percent since 1971, from 4.5 per hundred million vehicle miles

traveled, to 1.8.

ARTBA strongly encourages and supports:

- The continuation of highway safety-related federal-aid categorical programs for hazard elimination and safety improvements at rail-highway grade crossings;
- Ensuring that at least 10 percent of federal-aid "Surface Transportation Program" funds be spent on safety enhancements, as mandated;
- Federal financial support for driver education programs;
- Requirements that mandate any reconstruction project should contain, as a component, restoration of safety features to enhance the level of safety performance.

Highway reconstruction is increasingly being done under traffic conditions. The safety of industry employees and motorists in these construction work zones is of special concern to ARTBA. In any highway construction site, effective traffic control plans should be implemented, traffic control devices and other appurtenances should be properly maintained, and special emphasis should be placed on safety training for construction personnel.

Experience has shown that public awareness programs aimed at motorists can help to reduce the number of accidents in these work sites. ARTBA encourages the U.S. Department of Transportation and all state transportation departments to initiate and/or continue these programs.

ARTBA's highway safety policy is more fully developed in the Intermodal Transportation Safety Policy section.

Highway Quality

The American highway and bridge network stands as testament to the high quality construction and design work of ARTBA members. Most U.S. highways and bridges provide service well beyond their anticipated design life and traffic usage.

We recognize, however, that the pursuit of quality and an improved highway product is never ending. ARTBA supports the goals of the "National Highway Quality Initiative," which it helped develop in 1992 in cooperation with the Federal Highway Administration, American Association of State Highway and Transportation Officials, and other interested national organizations.

Policymakers and the public must recognize that highway *durability* and the *quality of highway construction*, while certainly linked, are not necessarily synonymous. Highway durability is directly related to public owner agency decisions regarding pavement design life, materials specifications, allowable vehicle weights and routine maintenance. Most of these decisions are directly related to the level of public investment government is willing to make in a highway project — both initially and over time.

ARTBA believes highway users are willing to pay more to build increased durability into our roads — and to ensure routine preventative maintenance — because such investments will save tax dollars over the long term. We encourage state and local governments to make durability a top priority as they develop highway project specifications. Similarly, we encourage the federal government to provide the states with the financial resources necessary to build a 40- to 50-year design life into the National Highway System as routes on it that have reached the end of their original design life are reconstructed.

The Interstate Highway Program

Initial construction of the 45,300-mile Interstate Highway System, initiated in 1956, should be completed by the mid-1990s. The federal focus should now turn to maintaining this multi-billion dollar investment that is a keystone of the U.S. economy and provides all Americans with unparalleled mobility. The Interstate System carries traffic loads far exceeding those projected when the system was originally planned almost four decades ago. And much of the system has exceeded its original 25-year design life and needs very significant repair and rehabilitation.

According to the U.S. Department of Transportation's 1993 report to Congress on the condition and investment requirements of the nation's highway and bridge network, 10,500 miles of Interstate Highway System pavement (23 percent of the system's total mileage) are in either "poor" or "mediocre" condition. An additional 7,300 miles are rated in only "fair" condition. The same report says that 13,725 bridges on the Interstate System — 25 percent of the total — are deficient and in need of repair or replacement.

The Interstate System will be the central highway network within the new 155,000-plus mile "National Highway System" (NHS) that Congress must approve by September 30, 1995. During that approval process, Congress should authorize funding levels sufficient to dramatically improve the condition and serviceability of the Interstate System portion of the NHS.

Specifically, ARTBA believes a national financial commitment should be made now to dramatically upgrade pavement durability on the Interstate Highway System to enhance serviceability and save tax dollars over the long term. We suggest that a systematic repair, replacement, rehabilitation and reconstruction program be initiated with the goal of replacing existing pavement on the entire Interstate System with pavements that have a 40- to 50-year design life by 2025. Several Western European nations have demonstrated that such durability can be achieved with adequate public investment in materials and routine maintenance using U.S.-derived construction and design techniques and equipment. ARTBA supports an increase in federal highway user fees for this purpose.

Traffic congestion on the urban portions of the Interstate System is having an increasingly negative effect on the movement of commercial goods. It also is a contributing factor in motor vehicle-related air pollution. This congestion is the result of an ever increasing U.S. driving population and significant changes in the American workplace that have occurred since the Interstate Highway System was originally planned (increased number of women in the work force, growth in service and light manufacturing industries, "just-in-time" delivery and warehousing, etc.).

Transportation and air quality planners should give very serious consideration to building capacity improvements to the Interstate System in these areas as part of a joint economic/clean air strategy.

National Highway System

The *Intermodal Surface Transportation Efficiency Act* (ISTEA), signed into law on December 18, 1991, set in motion the framework for developing a strategic federal investment program designed to upgrade those existing highways and bridges that serve a national interest. The law directs the U.S. Secretary of Transportation to designate, in consultation with the states, a 155,000-mile "National Highway System" (NHS) which will serve as the focal point for future federal highway and bridge capital investments. (The designation can vary up to 15 percent above or below the 155,000-mile guide.)

The states are to provide the Secretary of Transportation with their proposed NHS mileage by May 30, 1993. DOT must submit the national map to Congress by December 18. Congress must approve the NHS map by September 30, 1995.

Policy Statement

The NHS will help focus future federal highway funding on international and interstate routes, as well as on roads that serve major population centers, ports, airports, and international border crossings. While the NHS will include only 4 percent of the nation's existing highway mileage, it is the mileage that carries 40 percent of total vehicle-miles traveled in this country — including 80 percent of all tourist travel and 75 percent of all heavy truck travel.

Specifically, the NHS will include the 45,300-mile Interstate Highway System, existing major urban and rural arterials, the 15,000-mile defense strategic highway network, and strategic intermodal highway connectors. The NHS will reflect the major demographic and travel changes that have occurred in this country since the designation of the Interstate Highway System nearly 40 years ago.

Unfortunately, much of the NHS is in need of major repair or replacement. And that situation impedes U.S. competitiveness. According to the Competitiveness Policy Council, the U.S. Department of Transportation believes that an investment of $66.3 billion is needed to bring all bridges expected to be on the NHS back up to engineering standard. An additional investment of $145.4 billion, DOT says, is necessary to eliminate pavement deficiencies on the NHS over the next 15 years. Actually improving the capacity and performance of the NHS to meet traffic demand would cost considerably more.

ARTBA urges Congress to support the NHS concept and ensure that the system is adequately funded to meet the capital needs identified by the U.S. Department of Transportation. ARTBA supports an increase in the federal motor fuels excise for this purpose. Congress should be aware that the *Intermodal Surface Transportation Efficiency Act of 1991*, even if fully funded, will not provide enough money to even maintain current NHS pavement and bridge conditions.

Bridges

The U.S. Department's 1993 report to Congress on the condition and investment requirements of the nation's highways and bridges shows that 118,500 of the 575,000 bridges on the federal-aid system are structurally deficient — one in five. This includes 3,700 on the Interstate System. The report says the cost to eliminate existing backlog bridge deficiencies is approximately $78 billion. Less than $3 billion per year is currently authorized for federal bridge investments. ARTBA encourages Congress to significantly increase federal funding for bridge repair and replacement and continue discretionary funding for high-cost bridge projects. Proper investment should be made on individual projects to ensure that the highest quality materials and state-of-the-art technologies are used on federal-aid bridges.

ARTBA believes the federal government should establish uniform bridge inspection standards so that bridge funding priorities can be established. The choice between whether to rehabilitate or replace a structurally deficient bridge should be based on careful inspections and detailed cost comparisons that consider safety, future maintenance, environmental and social impact, and operational costs. Such studies, design services and bridge inspections should utilize professionally qualified engineers.

We also encourage the federal government to take the lead in developing and coordinating a national information system that would catalogue and share technical experiences and expertise in the areas of bridge repair and rehabilitation.

Surface Transportation Program

The Intermodal Surface Transportation Efficiency Act of 1991 created the Surface Transportation Program (STP) to serve as the funding mechanism for non-National Highway System routes that were previously on the federal-aid Primary, Secondary and Urban systems. Greater financial support for these highways is necessary to meet identified capital needs. Upgrading STP routes must remain a priority to help reduce urban congestion and improve rural mobility.

While ARTBA supports providing states with some flexibility to transfer funds between highway program categories (between the NHS and STP, for example), providing flexibility to transfer highway funds to non-highway activities raises concern. Shifting limited highway funds to other purposes delays needed highway and bridge capital improvements.

Intermodality

ARTBA believes it is essential that highway transportation be integrated with other transportation modes to serve the nation's defense, enhance its competitiveness in world markets, and improve mobility for all Americans. We support and encourage efforts to improve highway access to ports, airports, rail lines and terminals.

Flexibility in Use of Federal Highway Funds

ARTBA believes state and local governments should be given the flexibility to allocate their share of federal funding within the framework of the Federal-aid Highway Program as they see fit, providing that national highway needs within their state are met.

State & Local Decision-making Authority

Congress has given state transportation departments and metropolitan planning organizations broad authority and responsibility for planning, prioritizing and developing highway and bridge projects that qualify for federal aid. In carrying out these responsibilities, it is essential that states continue to be allowed to streamline federal program requirements, particularly in the area of project oversight where certification is required.

Wetlands & Environmental Permitting

ARTBA supports reasonable protection of environmentally-sensitive wetlands with policies that balance protection with economic realities and public mobility requirements.

We believe, however, that the current federal definition of what constitutes a "wetlands" is too ambiguous. This ambiguity is being used by those who advocate "no-growth" agendas to stop or delay needed transportation improvements at an enormous cost to the American taxpayer.

ARTBA urges Congress to more precisely define the term "wetlands area" so that wetlands are easily recognizable to landowners and transportation planners. We would define a wetlands as follows: If a land area is saturated with water at the surface during the normal growing season, has hydric soil, and supports aquatic-type vegetation, it is a functioning wetlands.

We also urge Congress to:

- Pass legislation that categorizes and regulates wetlands according to their relative values and functions. High value, environmentally sensitive areas that provide a full range of wetlands values and functions should be more strictly regulated than they are now under federal law. On the other hand, regulatory requirements for wetlands of lesser or marginal function and value should be relaxed.

- Streamline the environmental permitting process by eliminating the multi-agency environmental review process that has led to bureaucratic redundancies and delays. The authority to perform environmental reviews, prepare environmental impact statements, and

issue environment permits should be given to one federal agency — the U.S. Army Corps of Engineers.

ARTBA supports the concept of wetlands mitigation banking.

Clean Air Policies & Regulations: Support of Clean Technologies

ARTBA believes technology-based solutions — not efforts to restrict highway mobility — are the key to successfully reducing air pollutants. Real world experience shows that this approach works.

The U.S. Environmental Protection Agency (EPA) reports that although motor vehicle travel increased 40 percent between 1981 and 1991, highway-related emissions of carbon monoxide dropped 48 percent over the same period. Similarly, highway-related emissions of the two chemical compounds — nitrogen oxide and volatile organic compounds — which form ozone, the main contributor to urban smog, decreased by 35 and 50 percent, respectively.

According to EPA, motor vehicles built today emit 60 to 80 percent less pollutants than those built in the 1960s. So as older vehicles are replaced with new ones, the nation's motor vehicle fleet will become ever more "cleaner." Changes in the formulation of gasoline and increased use of alternate motor fuels also contribute to cleaner motor vehicle travel.

ARTBA urges auto manufacturers and energy producers to continue and accelerate research that will lead to even less polluting motor vehicles, fuels and power sources. The federal government should be a full and supportive partner in this effort.

ARTBA also believes that to achieve further significant improvements in air quality, the federal government should place much greater emphasis on reducing emissions from non-highway sources. While highway-related emissions have dropped dramatically over the past two decades, EPA reports that emissions from non-highway sources, such as electrical utilities, industrial processes and household equipment, have only dropped slightly or actually increased.

Clean Air Policies & Regulations: Easing Traffic Congestion

Traffic congestion is a contributing factor in auto emissions, although research has conclusively demonstrated that almost half of the air pollution caused by motor vehicles occurs during "cold starts" and not while the vehicle is being driven. To help curb air pollution resulting from traffic congestion, ARTBA supports and encourages highway-related solutions like construction of additional capacity to the highway system where appropriate, development of Intelligent Vehicle Highway Systems (IVHS), and implementation of traffic management solutions like ramp metering, increased real time signage, improved emergency road service, and better coordination of traffic signals.

Clean Air Policies & Regulations: Clean Air Act Amendments of 1990

The *Clean Air Act Amendments of 1990* (CAAA) require state and local governments to use computer modeling techniques in the development of state air quality and transportation plans. It also requires them to initiate specific transportation mobility control measures if the area is not in compliance with federal clean air standards. Failure to meet the *CAAA* air quality targets will result in sanctions against the states, including withholding of federal highway funds.

Computer models used in this area of science are extremely imprecise, at best. Confounding factors — sometimes unknown — and bias inherent in the selection of assumptions and the setting of parameters can affect modeling results and interpretation.

Further, real world experience has demonstrated that the mobility control measures called for in the *CAAA* will not be effective in meeting clean air standards. Both of these concerns are documented in the August 1993 U.S. Department of Transportation/Environmental Protection Agency report to Congress "Clean Air Through Transportation: Challenges in Meeting National Air Quality Standards."

For these reason, ARTBA urges Congress to begin an immediate review of the *CAAA* to remedy these flaws which could result in unnecessary mobility restrictions, the shut down of state transportation construction programs, and unwise expenditure of billions of tax dollars. ARTBA opposes the use of highway funding sanctions to achieve clean air standards. In their place, the federal government should provide positive financial incentives to states that reach air quality goals.

Partnering

ARTBA believes the partnering process should be implemented on all highway projects — from conception through construction. It is essential that partnering includes the project's design engineers, contractor, subcontractors, and public owner.

Systems Management

ARTBA believes a systems management approach must be utilized for pavements, drainage, bridges, congestion mitigation and safety in order to ensure that maximum return is made on the public highway investment. This should include proper pavement and structural design, utilization of life-cycle costing, partnering and total quality management programs, appropriate maintenance, and the timely completion of repairs and rehabilitation.

Disadvantaged Business Enterprise Program

The federally-mandated Disadvantaged Business Enterprise Program, as currently structured, does not meet the laudable objective of helping minorities and women establish viable firms that can successfully compete for transportation construction contracts in an unprotected market over the long term. The program has, however, perhaps unintentionally, created unfair competition in some specialty contracting fields of highway work that puts non-DBE firms at a distinct disadvantage.

The DBE program's focus should be on providing management training, technical skills, business loan, bonding and insurance opportunities for disadvantaged individuals interested in entering the transportation construction field. Unfortunately, it does not now address these issues.

It should also — at minimum — require uniform national standards for (a) certification of DBE firms and (b) mandated DBE firm capability profiles. The latter requirement would provide a realistic assessment of DBE market availability.

If there must be a percentage of work "goal" for inclusion of minority- and women-owned firms in the awarding of transportation construction contracts, ARTBA believes it should be a "single" goal.

Incentive/Disincentive Clauses

ARTBA supports the inclusion of incentive/disincentive clauses in highway construction contracts. This practice rewards contractors who utilize good management practices and innovative techniques and technologies to deliver contracted work prior to deadline. It also reduces inconvenience to the highway user caused by construction activity.

Design-Build

ARTBA opposes the concept of design-build for highway and bridge projects. Design and construction are separate categories of work, each demanding specialized professional skills and organizational capabilities. It is not economically feasible or desirable for most contracting firms to also

perform design work, or vice versa. Design-build contracts place all but the largest construction firms at a competitive disadvantage.

Warranting & Guaranteeing Highway Work

ARTBA believes quality construction is essential to the success and credibility of the U.S. highway program. And it believes that the nation's highway and bridge network stands testament to the high quality of the industry's craftsmanship relative to the level of public investment in the program (See "Highway Quality" policy statement).

Policymakers must understand, however, that the Federal-aid Highway System is owned and operated by public agencies on behalf of the taxpayer. Final payment to a contractor for work conducted is not made until the public owner agency has inspected and certified that the project has been built to the specifications that it set forth. Further, highway contractors do not have control over the myriad elements that affect the durability of a highway project (i.e., level of public investment made, initially and in routine maintenance; specification of design and materials that must be used in construction; traffic volume and allowable weights; etc.).

For these reasons, ARTBA believes it is unreasonable for government to require a contractor to warrant or guarantee a highway project and will oppose such initiatives.

Research & Development

Every effort must be made to ensure that highway users receive maximum benefit from every dollar invested in highway capital improvements. To help achieve this goal, greater emphasis must be placed on public and private highway research and development programs and technology transfer activities that can bring new products, techniques and ideas quickly into the field.

In support of these goals, ARTBA urges:

- Expanded federal support and involvement in highway-related research, particularly in the areas of safety, Intelligent Vehicle Highway Systems (IVHS), and pavement durability;
- Continued federal support for the Local Technical Assistance Program, which serves highway technology transfer centers across the nation;
- Implementation, where appropriate and practical, of products and techniques developed by the Strategic Highway Research Program; and
- Federal government encouragement — through special tax incentives and other means — of private sector research and development projects that have the potential to improve the quality, durability, safety and operation of our highways and bridges.

Bridge Formula/Truck Weights

ARTBA believes the current federal bridge weight formula should be replaced with the formula developed by the Texas Transportation Institute (TTI-HS20). Such an action would be consistent with the findings of the Transportation Research Board that the current federal bridge formula is "unnecessarily restrictive, particularly in regard to specialty hauling vehicles."

ARTBA also supports initiation of a special permit program for specialty hauling vehicles that would permit them to exceed federal axle weight limitations and be exempt from bridge formula requirements when operating on the Interstate Highway System, as long as they do not exceed 80,000 lbs.

Heavy Trucks

The accommodation of heavy truck traffic results in greater costs to maintain existing facilities and the need to provide increased structural strength on new and rehabilitated roads and bridges. There is a need to complete the necessary research on effective methods to reduce the damaging effect of heavy truck traffic on the highway system and to better utilize the greater capacity of our modern highways and bridges.

Use of Highway Right-of-Way

ARTBA encourages the use of highway right-of-way for public transportation purposes as long as such use does not limit highway use.

Border Infrastructure

ARTBA supports and encourages initiatives that will improve highway infrastructure along the U.S.-Mexico and U.S.-Canada borders.

Addressing Traffic Diversity

Highways must be designed and constructed in ways that assure the maximum safety and efficiency possible for all highway users, recognizing the vast differences that exist in the size and weight of motor vehicles that must share the road. Provisions must also be made on roads and streets for pedestrians, bicycles, mopeds and motorcycles, buses and other high-occupancy vehicles.

Qualifications-Based Selection

ARTBA believes contracts between project owners and planning/design consulting engineers should be procured by qualifications-based selection procedures to assure state-of-the-art, high-quality planning and design.

Pay-for-Performance Contracts

It has been suggested by some that a "pay-for-performance" approach be used in contracts for federal-aid highway work. The concept seeks to tie payment to contractors for work already performed to specification to, among other things, the durability over time of highway pavements — something contractors have little control over. (See ARTBA "Highway Quality" policy statement for extended discussion of this situation.) ARTBA believes this concept would inject subjective judgments into the open competitive bidding process and cause contractors serious financial problems. For these reasons, we oppose "pay-for-performance" contracts.

ABC
ASSOCIATED BUILDERS AND CONTRACTORS, INC.

Statement of Associated Builders and Contractors

Testimony of Thomas Musser, President
Tri-M Corporation
Kennett Square, Pennsylvania

on the Nation's Transportation and Environmental Infrastructure Needs

Submitted to the

Investigations and Oversight Subcommittee

Public Works and Transportation Committee

April 21, 1994

Speaking for the Merit Shop

1300 North Seventeenth Street
Rosslyn, Virginia 22209
(703) 812-2000

Good morning, My name is Tom Musser, President of Tri-M Corporation, based in Kennett Square, Pennsylvania. On behalf of Associated Builders and Contractors (ABC), I appreciate this opportunity to comment on the nation's transportation and environmental infrastructure needs.

Associated Builders and Contractors (ABC) is a national association representing over 16,000 contractors, subcontractors, material suppliers and related firms from across the country and from all specialties in the construction industry. Our diverse membership is bound by a commitment to the merit shop -- the most efficient construction technique in America. The merit shop philosophy of awarding construction contracts to the lowest responsible bidder, regardless of labor affiliation, through open and competitive bidding, assures taxpayers and consumers the most value for their construction dollar. With 75 percent of construction done today by merit shop contractors, ABC is proud to be their voice.

ABC has had the opportunity to appear before the Public Works and Transportation Committee several times in recent years to express our concerns regarding our nation's infrastructure. Our 16,000 members share your commitment to maintain and improve the quality of America's infrastructure. ABC is anxious to contribute construction-specific concerns regarding the state of our nation's infrastructure systems.

OUR NATION'S INFRASTRUCTURE

During the twentieth century, the Federal Government has invested billions of dollars to help fund, design, and construct highways, airports, and transit systems. As a national association representing contractors from all sectors of the construction industry, ABC is proud to have played a role in building our nation's public works. Following decades of Federal assistance for infrastructure development, however, many concerns remain about the quality of existing transportation infrastructure and the continuing congestion experienced not only in metropolitan centers, but in suburban and rural areas as well.

ABC agrees that the existing U.S. infrastructure represents an important national investment. The value of the capital stock -- from highways to ports to waste disposal facilities-- has been estimated at about $1.4 trillion, slightly more than 20 percent of the nation's total public and private capital stock.

However, the federal role in financing and promoting new capital programs for public works has been greatly diminished in recent years. State and local governments increased their own spending but not enough to make up for the smaller federal contribution or to adequately address needs. In recent years, economists have linked the declining investment in infrastructure with a drop in the U.S. productivity rate.

New highway construction affects industries accounting for more than 80 percent of the U.S. economy. About 350 sectors of the economy -- out of about 430 defined sectors -- produce goods and services as inputs to new highway construction. For every dollar spent building new highways, output in the economy is estimated to rise by about $2.43. In addition to the effect on output, employment is also affected. For every $1 billion of new highway construction spending, employment is estimated to rise by about 24,300 workers. Of these workers, about 10,640 are employed in the construction of new highway infrastructure; the remainder are in industries that supply inputs, directly (those that work on the highways or contribute the needed supplies and work to construct the highways) or indirectly (those businesses that are able to operate as a result of new highways), to the building of new highways. With the designation and approval of the National Highway System routes set to occur within the next year, ABC believes that the anticipated increase in economic growth in a given community will translate into an increase in building and other commercial construction activities.

In addition to the value of new highways and the employment associated with it, new businesses and products can be associated with the construction of new highways, as well as an increase in property values and commercial activities. More than $783 million, of the $1.43 billion contributed by these other sectors, can be directly associated with new highway construction. These other sectors are estimated to employ about 13,645 workers. Of these workers, nearly 7,440 persons are judged to be involved directly in the construction of highways, and about 6,205 are indirectly employed as a result of this new construction. Consequently, the effect of new highway construction on the U.S. economy extends far beyond the actual building of new highway infrastructure. ABC strongly supports the federal governments commitment to improving and modernizing our highways and bridges, as we also believe that the net effect of this construction will help our economy immensely.

In several published papers, Dr. David Aschauer, professor of economics at Bates College (Lewiston, ME), has studied the effects of transportation infrastructure on regional and national economic growth. In a 1990 study published by the Economic Policy Institute, Dr. Aschauer finds that "the nation's stock of 'core infrastructure' (streets and highways, mass transit, airports, water and sewer systems, and electrical and gas facilities) are intrinsic to almost every sector of private production and are especially influential in the determination of total national economic output." In his 1990 article, Highway Capacity and Economic Growth, Aschauer finds that:

> An increase in the stock of highways for a given locale generates a higher return to local, productive activity by raising the level of transportation services available to producers. This higher return to production, in turn, stimulates private investment in these productive facilities. The increased investment carries with it higher growth in output and income for the particular locale.

FUNDING

Our nation's infrastructure, a vital component of our future economic growth and stability, continues to suffer from a serious lack of investment. This investment gap imposes rising costs on our nation's productivity, inhibiting our ability to compete in an increasingly global economy and threatening our basic quality of life. Since passage of ISTEA, appropriations have failed to meet authorizations by some $4 billion. State and local governments who developed their transportation programs based on a fully-funded five-year federal transportation program have had to make quite a few adjustments based on the ISTEA shortfall.

ABC is pleased that the recently released Department of Transportation budget allocates $20.3 billion for the Federal Highway Administration to fully fund the program for FY 1995. While the administration proposes full funding, the source of those funds -- the Highway Trust Fund -- has been greatly effected by new fuel taxes which are earmarked for deficit reduction purposes. As a result of the Omnibus Budget Reconciliation Act of 1993, an additional 4.3 cents per gallon of federal fuel taxes goes for deficit reduction. When added to the 2.5 cent gas tax imposed in the 1990 budget agreement, a total of 6.8 cents per gallon of the federal gas tax now goes to the general revenue fund.

ABC has long advocated that revenues raised by user fees and collected in transportation trust funds should be allocated and spent solely for their intended purposes. The return of the 2.5 cent diversion to the Highway Trust Fund is a positive signal to send to the millions of highway users that contribute in good faith to the maintenance and improvement of our roadways every time they visit the pump.

While the 2.5 cent diversion is scheduled to be returned to the Highway Trust Fund in October, 1995, it is our concern that unless it is returned sooner, the trust fund will be sorely underfunded. There is the possibility that, in light of other Administration policies and proposals, the Highway Trust Fund will not be able to sustain the program in the out years of ISTEA, even with the return of the diverted funds. Returning the 2.5 cent diversion earlier than FY 1996 could help to offset other drains on the trust fund such as the alternative fuels tax exemption.

In planning for a continuing highway program, serious consideration must be given to repeal of the ethanol exemption from the motor fuels tax. We believe continuation of the current gasohol exemption undermines efforts to invest in our nation's infrastructure. The current exemption costs the Highway Trust Fund $500 million each year with an additional $200 million diverted from state and local transportation needs. The gasohol subsidy was originally intended to promote the use of environmentally friendly fuels. Now that Congress has mandated the use of these fuels, we believe a subsidy of this nature is no longer necessary, and at the very minimum the highway program should not bear the

brunt of a subsidized alternative fuels program. Additionally, EPA's proposed rule requiring a 30% ethanol mandate for reformulated gasoline will result in yet another drain on the Highway Trust Fund of $340 million annually.

ABC firmly believes that revenues raised by user fees and collected in transportation trust funds should be allocated and spent solely for their intended purposes. We believe that the Highway Trust Fund should be made permanent and taken off-budget; the current practice of holding money in the trust fund to mask the size of the federal deficit is not constructive policy for the country and certainly not for the our nation's transportation program.

STATE ROLE

ABC supports the flexible funding structure of ISTEA, allowing states and localities to decide the best use of the available federal funds. Because transfer provisions are an option that may be taken by state and local officials, input from many different transportation users and suppliers should be gathered when making these transfer decisions.

Under ISTEA, the increased flexibility of the Urban and Rural Program has empowered states to choose how they will improve their condition. States have begun to focus on internal transportation issues such as congestion relief, rural access and intermodal links. The capability of states and localities to prioritize their transportation demands and allocate funding as needed is a basic necessity for transportation efficiency in the future. Thus, it is imperative that the state authority regarding the use of transportation funds be maintained.

The increased emphasis placed on planning in ISTEA and the reliance on Metropolitan Planning Organizations has been invaluable in properly coordinating needs and planning for the future. For instance, governmental partnerships established at every level to investigate current and future transportation needs has facilitated the development of the NHS map that we know today. While the most effective planning has involved several groups, ABC believes that the next decisions -- implementation and allocation of funds for the NHS -- must lie with the states.

FLEXIBILITY OF FUNDS

As ISTEA proceeds, ABC will continue to monitor the transfer provisions of the program. While the funding flexibility of ISTEA allows transfers between highway categories, it also allows transfers from highway categories for transit uses, as well as transfers from highways to transportation enhancements, such as acquisition of scenic, historic, or archaeological sites. When ISTEA became law, it made at least $90 billion of highway user taxes eligible for transfer to fixed rail transit, bicycle paths, magnetic

levitation trains, the restoration of historic railroad stations, and a host of other non-highway purposes. In 1992, $261 million was transferred from highways to transit projects in 15 states. Estimates suggest that as much as $500 million could be transferred to non-highway projects this year alone. There have been no transfers from transit to highway accounts. While ABC supports the flexibility of ISTEA, we are concerned that in some cases funds are not being used for their intended purpose.

SPECIFIC ALLOCATION REQUIREMENTS

As infrastructure funding is under consideration, ABC urges the committee and Congress to reject any attempts to continue specific use requirements to this funding. ABC is opposed to the idea of developing additional requirements mandating state use of transportation funds for urban projects, designating separate maintenance funds, or limiting new construction or capacity. Under current statute, states have the ability to determine use of funds for their transportation needs. The flexibility of ISTEA would be broken by proposing these types of specific allocation requirements.

As hearings continue on the state of our nation's infrastructure and ideas are discussed to improve these problems, ABC asks the committee to consider the following reforms and provisions that affect our nation's transportation current and future programs:

DAVIS-BACON ACT

With the funding constraints that we have already experienced under ISTEA and the anticipation of less than full funding for the life of the Act, ABC proposes reform of the federal prevailing wage law to help stretch the limited federal funds available for projects such as the National Highway System. ABC continues to advocate a minimum Davis-Bacon Act threshold on federal construction projects of one million dollars.

As you know, the Davis-Bacon Act mandates "prevailing wage" rates be paid on all federal or federally-assisted projects of $2000 or more. The original intent of the act was to protect local workers from itinerant laborers who worked for lower wages. This noble intent has been replaced by an outdated measure hampering competition, disrupting local economies and restricting job opportunities for small businesses.

With immediate needs for highway and bridge construction and repair far outstripping the current and anticipated supply of available funds, reform of the Davis-Bacon statute can provide additional dollars to fund our infrastructure needs.

WARRANTY/GUARANTEE PROVISIONS

ABC is opposed to any attempt to amend current regulations to allow state transportation or highway departments to incorporate warranty or guarantee provisions into federal-aid construction projects. ABC believes that warranty and guarantee

provisions -- which are prohibited under current law -- are unnecessary and potentially damaging to a presently successful contracting process.

Our members pride themselves in quality construction work. We strongly oppose, however, efforts to hold contractors responsible for the performance of materials and structures when a host of outside factors contribute to product life, such as project design and post-construction project use.

Quality construction work is assured through the current contracting process. That is, contractors are not fully paid until they have met all the requirements and specifications in their contracts which are monitored through regular state inspection. Additionally, pursuant to the Miller Act, contractors on federal projects are required to be bonded -- guaranteeing the government satisfactory project completion.

Warranty and guarantee provisions would create serious liability problems for contractors. Moreover, the current level of competition among contractors would be greatly diminished as many would be unable to assume the huge financial risk in backing long-term warranties. It is unlikely that small or average-sized companies could obtain surety bonds to secure contracts that include long-term guarantee or warranty provisions, thus confining highway construction to a few very large firms with enormous financial resources.

DISADVANTAGED BUSINESS ENTERPRISE PROGRAM

ISTEA continues the Disadvantaged Business Enterprise Program (DBE) whereby 10 percent of federal-aid highway, highway safety and mass transit program funds are to be awarded to DBE contractors. This stringent 10 percent DBE requirement fails to recognize the need for flexibility and cooperation which we believe Congress had originally intended in its minority provision.

Instead, ABC believes that partnering and mentoring programs that help disadvantaged firms and their employees become more skilled at both the craft and management levels are most successful. Training is an investment in the future and will better equip DBE firms with the skills necessary to successfully compete in the absence of preferential treatment. ABC has entered into a formal agreement with the National Association of Minority Contractors (NAMC) and the National Association of Women in Construction (NAWIC) to work together to expand educational and training opportunities to further integrate minority-owned firms into the construction industry. This partnership is a result of the activities of an ABC task force which identified ways to implement private sector initiatives to facilitate the participation of women and minorities in the construction industry. ABC, NAMC and NAWIC are focusing on education and training opportunities to provide women and minority entrepreneurs access to the skills and knowledge necessary to be competitive and earn the rewards which accompany success in the free enterprise system.

Additionally, ABC has focused a large portion of its financial, membership and staff resources on the issue of craft and supervisory training. In January, 1993, ABC completed a special report on training issues within the U.S. construction industry which we delivered to President Clinton and the Congress. The report outlines the progress of ABC, along with sixteen of the nation's largest open shop contractors, in developing standardized craft training; our Wheels of Learning program has been developed to more efficiently and effectively train and upgrade the construction workforce. We have long recognized that if the United States is to foster expanded opportunities for all its citizens and maintain its competitiveness, hundreds of thousands of additional highly skilled workers will be needed between now and the year 2000. Training is the only solution.

Although individual ABC members participate in the DBE program, ABC officially opposes restrictive bid practices. This policy stems from our belief that set-aside programs have failed to prepare certified DBEs for success in an open, competitive bid situation. ABC supports the Department of Transportation's proposed revisions to the DBE program which should achieve two important aims: to provide participating DBEs with business development skills and to ensure their graduation into the open bid environment.

On behalf of the Associated Builders and Contractors, I again want to thank Chairman Borski and the Subcommittee on Investigations and Oversight for the opportunity to share our views on the state of our nations' infrastructure.

COMMUNITY TRANSPORTATION ASSOCIATION OF AMERICA
CTAA
1440 New York Avenue, N.W., Suite 440 Washington, D.C. 20005 (202) 628-1480 • FAX (202) 737-9197

STATEMENT OF DAVID RAPHAEL

EXECUTIVE DIRECTOR

COMMUNITY TRANSPORTATION ASSOCIATION OF AMERICA (CTAA)
Washington, D.C.

Before the

SUBCOMMITTEE ON INVESTIGATIONS and OVERSIGHT

of the

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

U.S. HOUSE OF REPRESENTATIVES

April 21, 1994

Statement of David Raphael
Executive Director
Community Transportation Association of America (CTAA)
Washington, DC

Before the

SUBCOMMITTEE ON INVESTIGATIONS and OVERSIGHT
of the
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
U.S. HOUSE OF REPRESENTATIVES

Mr. Chairman, members of the Committee, my name is David Raphael. I am the Executive Director of the Community Transportation Association of America (CTAA), a position that I have held since CTAA was founded in 1989. CTAA is a nonprofit organization that represents both the people who operate local community transit services as well as the people who depend on community transportation as their lifeline to jobs and basic services such as health care. Our members include the managers and operators of rural, smaller urban and specialized transit agencies throughout the country. CTAA is a national association and is based here in Washington.

Joining me at these hearings today is Doug Hartley, the Executive Director of the West Virginia Public Transit Association. Mr. Hartley and his association are members of CTAA, as are almost 800 local transit systems and state transit associations across the country. I will comment briefly on the status of rural transportation nationally, while Doug will share with you his concerns and experience from a West Virginia perspective.

Mr. Chairman, we congratulate you and your Committee for undertaking this important series of hearings on our nation's transportation and environmental infrastructure needs. We appreciate your invitation to CTAA to appear here today and to share with you our experience and that of our nationwide membership. We are also delighted to have this opportunity to share with members of the Committee the results of our just-completed survey of rural public transit systems that CTAA has undertaken for the Federal Transit Administration (FTA). Appended to my statement is a special summary of the major findings of a survey of FTA's 1,200 recipients of Section 18 funding that we prepared for the Subcommittee. I hope that this brief report can be included in the record of these hearings.

Mr. Chairman, we are also pleased to be a part of today's proceedings because they represent a continuation of this Subcommittee's fine work in the area of rural transportation. Almost nine years ago, the Oversight Subcommittee conducted two days of extensive rural transit hearings. From what we can tell, this was the first time that Congress took a comprehensive look at the subject of rural mobility and transportation needs of people in rural America.

Those hearings also had an important impact on subsequent federal initiatives and policies, and have helped to shape the development of rural transit over the past decade. For example, in response to the documented need for technical assistance and support services tailored to the needs of rural transit systems, within a year of the hearings Congress had established Section 18(h), the Rural Transit Assistance Program (RTAP). Although modest in size, RTAP has proven to be a vital source of information and assistance to smaller transit agencies operating in rural areas.

Similarly, testimony at those 1985 hearings dramatically demonstrated the imbalance that existed in the distribution of federal transit assistance. At the time, less than 3% of transit formula assistance funds were allocated to non-urbanized areas, although almost 40% of the nation's population resided in communities under 50,000 in population. In an effort to partially correct this funding inequity, Congress subsequently increased the rural share to 5.5% of FTA's formula funds in the ISTEA legislation that was adopted in 1991.

And finally, the Subcommittee's hearings were also important in documenting the major role that HHS funding and human service resources played in transporting people in rural areas, particularly the poor, older Americans and people with disabilities. For the first time, it was publicly estimated that the Department of Health and Human Services was spending between $800 million and $1.2 billion on transportation services for agency clients each year. Because of the hearings, a joint HHS/DOT inter-agency council was formed to identify regulatory barriers and help improve the coordination of federal transit programs. Those joint efforts between the Departments are continuing to this day, and with the implementation of the ADA, are more important than ever before.

Mr. Chairman, my testimony today is intended to provide members of this Committee with an update on the status of rural public transportation, with a special emphasis on changes that have taken place over the past decade. The information presented here represents the findings of a year-long effort that CTAA is just completing for FTA under the national RTAP program, a survey

of Section 18 grant recipients. Preliminary data from the survey has been submitted to FTA officials, with a final version due by early summer. I should point out that the interpretation of the data is strictly ours, and does not reflect the opinions or conclusions of the Federal Transit Administration (FTA).

The Rural Transit Network

The rural transit network has grown significantly since the Section 18 program was established in 1978---including a 30% increase in just the last five years. Today, there are approximately 1,400 rural transit agencies operating under FTA's Section 18 program. This includes 1,200 direct recipients of federal funds and 200 subcontractors.

Collectively, this rural network operates in almost 1,900 counties, serving a nonurbanized population of 56 million. While, nearly 60% of the rural transit services is provided by local public agencies, another 40% is provided by private, nonprofit organizations. Indian tribes and private carriers make up less than 3% of the Section 18 recipients.

With regard to funding, these critical rural operations reflect a large number of small providers, doing more with less, and operating on shoe-string budgets. The average rural transit budget, for example, is only slightly more than $150,000.

The Rural Fleet

The rural transit fleet is made up of nearly 13,000 smaller buses, vans and other transit vehicles, providing more than 100 million trips per year. The number of vehicles in rural service today is roughly 25% greater than in 1989. About 45% of these vehicles are wheelchair accessible. Thirty percent of the vehicles in the national fleet are over six years old. Of the vans in service---which make up over 50% of the fleet---more than 40% are beyond their four-year, 100,000-mile service life. Over than half of all the vehicles in rural service today exceed their expected vehicle life.

Ridership

It is important to understand that the people who use and depend on public transit services in rural areas have traditionally been those who have no alternatives and who, for the most part, are isolated and shut off from the rest of the community. They do not or cannot drive their own cars or cannot afford to operate a car of their own. Our recent study confirms that the core ridership of the Section 18 network is predominantly the transit dependent.

Over 60% of all riders are female. More than 35% are elderly and nearly one-fourth have a disability (almost half of the disabled ridership is also elderly). One-fifth of all trips are reportedly for employment or job training, 14% for health care and 17% in connection with other social service benefit programs.

Section 18 Funding

As I mentioned earlier, the enactment of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 represented a significant move toward greater equity and balance in federal transit assistance through an increased percentage allocation to rural areas. However, even if the Section 18 program was funded next year at its fully authorized level of $154 million, as proposed by the President's FY'95 budget proposal, rural areas would receive the equivalent of less than $2 of formula assistance per capita, compared with more than $9 in our small urbanized areas, and nearly $18 per capita in the largest cities. When discretionary capital assistance grants are added to the formula share, the per capita funding level rises to $35 in cities with populations of one million or more.

Levels of Service

And finally, Mr. Chairman, I'd like to discuss the relative levels of public transit service that are being provided in rural America today. It's one of those situations where the glass is both half full and half empty at the same time.

For example, today, over 34 million rural residents have access to some public transit service. Public transportation is available, at least to a limited extent, in more than 1,700 non-metropolitan counties. That coverage represents a remarkable expansion of service in the 15 years since the Section 18 program was established. It is particularly significant in view of the limited funding resources that rural operators have had to work with and the numerous obstacles they have had to overcome.

On the other hand, it remains true that more than a third of our nation's rural communities see no benefits whatever from the Section 18 program. Over 875 rural counties today remain completely unserved by public transit, an area that includes nearly 27 million people, or roughly one-third of the nation's rural population. Another 30% live in areas where the average annual service level is less than two trips per capita, or less than 25 yearly trips per carless household. By comparison, the equivalent transit service in urbanized areas is equal to 50 trips per resident (25 times the rural average), or 980 trips per carless household (39 times the rural average).

In West Virginia, the gaps in public transit service is even more pronounced. Twenty-six of West Virginia's 44 rural counties, 60% of the state, have no public transit service at all. Service in four counties is equal to the national Sec. 18 average of 2 trips per year per capita, while service in 12 counties is below this average. In only two counties is the amount of service above the national average.

Conclusion

From a public policy point of view, we should take pride in what has been accomplished in a relatively short period of time. But we should also be alarmed that such a large portion of our population remains isolated and out of the economic and social mainstream because their individual mobility is limited and they lack access to affordable public transportation alternatives.

Access to Health Care: The nation has embarked on a major effort to develop a universal health care system. However, for many rural Americans, the lack of access to doctors and medical facilities remains as great a barrier to good health as the lack of medical insurance. Quality health care requires that people not only have the ability to pay for needed medical services, but the ability to get to them as well.

Access to Jobs: Similarly, reforming our nation's welfare system and improving economic opportunities for all will mean that transportation barriers also must be addressed. The lack of adequate and affordable transportation represents a major obstacle to fully mobilizing America's workforce, particularly for the unemployed and the majority of welfare recipients who do not own cars. Successful national employment strategies and welfare reform will depend not only on the availability of jobs, but also on access to them and/or employment training centers.

In the absence of transit alternatives, unemployed workers in many rural communities are stranded. A recent study of welfare reform efforts in North Carolina, for example, concluded that the absence of affordable transportation to work and training sites was the most critical obstacle in each rural county.

Mr. Chairman, this concludes my testimony. I wanted to thank you again for the invitation and opportunity to appear before you today. I would also be delighted to try to answer any questions that you or other members of the Committee might have.

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COMMUNITY TRANSPORTATION ASSOCIATION OF AMERICA

Federal Transit Assistance in Rural America: An Assessment of the Rural Transit Infrastructure

A Special Report Prepared for:

Subcommittee on Investigations and Oversight
Public Works and Transportation Committee
U.S. House of Representatives

April 1994

BACKGROUND

In July 1993, CTAA undertook a nationwide survey of rural transit services funded under Section 18 of the Federal Transit Act. The two principal purposes of the project, which is being funded by the Federal Transit Administration (FTA) under the Rural Transit Assistance Program (RTAP), are 1) to identify the number and type of local transit agencies providing transportation services in rural areas, and 2) to assess the relative levels of transit services available to residents of small towns and rural communities. This project builds on two previous research projects conducted by CTAA---a directory of FTA-funded rural and specialized transit systems published in 1989, and a profile of FTA's Section 18 rural transportation program published in 1991.

The following is a analysis of the preliminary survey data that has been prepared by Dr. George Rucker, CTAA's Director of Research and Policy. The final report on the status of public transportation in rural America will be completed by June 1, 1994.

Section 18 Network

As of April 1, 1994, CTAA has identified 1,180 Section 18 grant recipients, and has obtained operational data from more than 80 percent of them. Public bodies make up 58 percent of the network, private nonprofit organizations account for another 39 percent, 2 percent are for-profit entities and the final 1 percent are Native American agencies. (Government agencies make up 70 percent of the Section 18 network in the Northeast but only 51 percent in the South. For-profit firms make up 6 percent in the Northeast, nearly 3 percent in the Midwest, and less than 1 percent in the West and South.)

Just over one-fifth of the recipients report that they contract with others for all (9 percent) or part (13 percent) of the service. This suggests that the total number of agencies involved is at least 1,400.

In terms of service area, 53 percent of the providers say that they operate county-wide (or, in a few cases, at least a substantial portion of the county). The aggregate service areas of this group has a population of 25.3 million. One-fourth of the providers limit their operations basically to a single town or city (in a few cases a pair). With a total population of 4.4 million, these places have an average density of nearly 1,300 persons per square mile. Average density for the county-wide operators is less than 80 persons per square mile and the multi-county service areas reported an average density of less than 50 persons per square mile. The average number of counties served by this group of providers is 3 in the Northeast and West, 5 in the South and 6 in the Midwest. The aggregate population represented is 29 million.

In short, an estimated 36 percent of all rural residents live outside the service area of any Section 18 operator. Nearly 37 percent of this unserved population lives in areas close enough to an urban center to be part of a Metropolitan Statistical Area (MSA). It is likely that some of them are served by an urban system. But it remains true that 38 percent of the nation's nonmetropolitan population appears to live in areas completely unserved by public transit.

Among service modes, demand response is most often reported (by almost 90 percent of the agencies) but accounts for only 31 percent of all trips (44 percent if pre-arranged subscription service is also included). Fixed route service is reported by only 43 percent of the agencies but is said to make up 54 percent of all trips. About one-third of the agencies report subscription service and it accounts for 13 percent of all trips.

Section 18 Fleet

The latest projection of total vehicles utilized in Section 18 service comes to 12,450, a 23 percent increase compared with the 1989 profile. Of these, 53 percent are vans (8-to-15 seats) and 23 percent are small buses (16-to-24 seats). The average vehicle is a 1988 model and 30 percent are over six years old (a 1986 or prior model). More than 36 percent of the vans are beyond their 5-year expected life.

Data on whether or not vehicles are lift- or ramp-equipped show that 45 percent of all vehicles other than sedans or station wagons are wheelchair-accessible. This is true of 66 percent of the small buses, 43 percent of the medium buses, 40 percent of the vans and 21 percent of the large buses. These all represent increases over the 1989 data.

Annual vehicle miles reported by the network project to a total of 252.8 million, or about 2.5 miles vehicle miles per trip. Regionally, the range is from an average of 1.6 vehicle miles per trip in the West to 3.0 in the South. These averages obscure the substantial difference in miles-per-trip associated with different service modes, of course.

For providers reporting only fixed route service, the average is only 1.1 vehicle miles per trip, while for those reporting only demand-response and/or subscription service, the average is 4 vehicle miles per trip. Similarly, providers serving only a city or town average 1 mile per trip, while those with county-wide or larger service areas, report an average of 3.4 vehicle miles per trip.

Service Levels

Trips reported by the Section 18 network project to a total of 100.7 million a year. This is the equivalent of 1.1 trips per capita if one looks at the total non-urbanized population, but about 1.7 trips per capita if one looks only at the population in the current service area of the network. Looked at relative to the number of households without any access to a car or light truck, the projected service level is the equivalent of about 40 trips per carless household in non-urbanized areas. For comparison purposes, Section 15 trip data reflect the equivalent in urbanized areas of 50 trips per capita or 984 trips per carless household. Looking only at small urbanized areas (under 200,000 population), Section 9 service is equivalent to 8 trips per capita or 223 trips per carless household.

As noted earlier, 36 percent of the nation's non-urbanized population is in areas totally unserved by Section 18. Another 29 percent live in areas in which the average service is less than 25 yearly trips per carless household. Fourteen percent live in areas in which the Section 18 service is equivalent to 25-to-50 trips per carless household and the remaining 21 percent live in areas for which relative service levels are above 50 trips per carless household. Within the areas served, the average service level is equivalent to 61 trips per carless household, but the median level is only 34 trips per carless household. (This means that half of the non-urbanized counties and towns report a service level of no more than 29 trips per carless household.)

It is clear that the core ridership of the Section 18 network is predominantly the transit dependent. Sixty-two percent of all riders are said to be female. Thirty-six percent are elderly and nearly one-fourth are said to have a disability (almost half of the disabled ridership is also elderly). In short, only 51 percent of ridership is neither elderly nor disabled. Similarly, trip purposes indicate the essential role of the service in providing access to jobs and other social services. One-fifth of all trips are reportedly for employment or job training, 14 percent for health care and 17 percent in connection with other social service program activities.

Extending Service to All

In an effort to estimate the increase in Section 18 service that would be required to at least bring all rural residents up to a level of service equivalent to 25-to-50 trips per carless household, the following methodology has been used. Average per capita trip levels were computed for service in areas meeting that standard (1.07 trips per capita) and for areas with some service but less than that level (0.32 trips per capita). The difference between these two rates was multiplied by the estimated population in the "low" service areas (26.3 million), giving a "need" figure of 19.7 million more trips. For the areas completely unserved, it was assumed that half of those in metropolitan areas receive adequate service from an urban provider (a generous assumption). This still leaves an estimated 26.5 million residents of unserved areas. Multiplying that figure by the 1.07 per capita trip level calculated for the "average" service areas gives a total "need" of 28.4 million trips per year. That total shortfall of 48 million trips represents 48 percent of current service.

Note that even that increase in Section 18 service would leave the relative level in non-urbanized areas less than half that in small urbanized areas.

Section 18 Funding

Operating budgets reported by Section 18 agencies aggregate a projected $350.9 million, or $303,800 per grantee. (This compares with a 1989 average of $231,300.) Section 18 funds are said to account for 24 percent of this (as compared with 29 percent in the 1989 data), state and local government funding for 40 percent (up from 34 percent in the earlier data), and fares for 15 percent (compared with 16 percent earlier).

Regionally, Section 18 funds are most important in the South (where they account for more than one-third of the average budget) and least important in the West (where they only make up 13 percent of funding). Conversely, state and local government funding are most important in the West (making up 58 percent of revenues) and least available in the South (where they provide only 23 percent of funding).

Median budget size is only half the arithmetic average, reflecting the very large number of small agencies (especially in the West and Midwest). Forty-six percent of the network operate a fleet of no more than 5 vehicles. The average budget reported for these agencies is less than $90,000 a year and the median about two-thirds of that mean figure.

Section 18 Facilities

Thirty percent of the Section 18 agencies report owning a maintenance facility and another 9-plus percent indicate that they rent or lease a maintenance facility. The remaining 60 percent report that they send their vehicles elsewhere for maintenance. Ownership or rent of a maintenance facility is related to fleet size, but less than might be expected. Only 28 percent of those with a fleet of 5 or less report having a facility, while the figure is 53 percent for those with more than 10 vehicles. It should be noted that a substantial number of smaller providers are local government agencies and have access to facilities which are not limited to servicing transit vehicles. As to the adequacy of maintenance facilities, 60 percent of those renting and 74 percent of those owning indicated that the facility is large enough to meet their needs. (The average size reported was a surprising 7,632 square feet.) In addition, 60 percent of those renting and 68 percent of those owning indicated that the facility is adequately equipped for their needs. Asked to rate the facility on a scale of four (from Excellent to Very Poor), 68 percent of the renters and 88 percent of the owners rated their facility Good or Excellent. The over-all ratings were: 29 percent Excellent, 53 percent Good, 14 percent Poor and 4 percent Very Poor.)

Asked about plans to acquire, replace, expand or renovate maintenance facilities, only 9 percent of those not currently having one indicated "definite" plans to acquire a facility. Nearly one-third of those currently renting indicated plans to acquire or replace the facility and another 17 percent said they planned to expand or improve it. Among owners, only 1 percent indicated plans to replace but 24 percent said they have plans to expand or renovate the facility.

Ownership of their administrative facilities was reported by 55 percent of the providers (again, a substantial number of these are local government agencies housed in local government space). Of those owning, 19 percent indicated plans to expand or renovate. Of those renting administrative space, 18 percent plan to acquire and another 12 percent plan to expand or renovate the facility they are in.

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Statement of Rodney E. Slater
Administrator
Federal Highway Administration

Before the Committee on Public Works and Transportation
Subcommittee on Investigation and Oversight

April 21, 1994

Infrastructure Investments

Mr. Chairman, I am pleased to testify at today's hearing on the transportation and environmental infrastructure needs of the Nation. I am also pleased to appear with the Federal Transit Administrator, Gordon Linton. Both of us, as well as Secretary Peña, are committed to a truly intermodal effort as we carry out the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). It is very timely for me because I have just completed a 3,500 mile, border to border, 14-day, 14-State, fact-finding trip to assess our surface transportation infrastructure needs, to evaluate the implementation of ISTEA, and to get a fuller understanding of the proposed National Highway System (NHS) which we recently submitted to the Congress for approval and which you have considered in recent hearings. Another purpose of this border to border mission from Buffalo, New York, to Laredo, Texas, was to focus on what Secretary Peña and I consider to be the logical follow-up of the NHS, an intermodal National Transportation System.

An event which occurred during my trip and which underscores the importance of this hearing today was the opening of the Santa Monica Freeway in Los Angeles only 84 days after the quake. The quake and last year's Midwest floods have demonstrated the effects of damage to important parts of our transportation infrastructure and brought home to us the overall importance of transportation infrastructure to our national economy, and our overall quality of life.

I believe the public is aware, if not alarmed, at the current condition of our infrastructure. My road tour confirmed this belief. These conditions were also very vividly outlined in the Washington Post supplement of March 22, titled "Infrastructure: Preparing for the 21st Century," which I commend to all for reading. This highlighted the concerns of many, including the Vice President, Secretary Peña, the Chairman of this Committee, the Chairman and Ranking Minority Member of the Senate Environment and Public Works Committee, and other transportation leaders, economists, and transportation experts. This Administration is committed to wise investment in our infrastructure facilities and the continued improvement in the quality and performance of our infrastructure programs. The President's proposal in his FY 1995 budget to fully fund ISTEA underlines this belief. As President Clinton has said, "A well-functioning infrastructure is vital to sustained economic growth, to the quality of life in our communities, and to the protection of our environment and natural resources."

Infrastructure Needs

Our most recent assessment of highway, bridge, and transit conditions and performance is contained in the 1993 version of the congressionally required biennial report Status of the Nation's Highways, Bridges, and Transit: Conditions and Performance. The estimates contained therein were developed from 1991 data. The report shows that the cost to eliminate the existing backlog of highway pavement deficiencies and feasible capacity deficiencies is approximately $212 billion. The current cost to eliminate the existing backlog of bridge deficiencies is about $78 billion, for a total backlog of approximately $290 billion. The backlog in all categories is gradually increasing since, collectively, the Federal, State, and local governments are not investing at a rate to maintain overall conditions and performance. Fully funding the core ISTEA programs will help bridge that gap.

There are substantial costs to the economy as a result of congestion. In the Nation's 50 most populous urban areas, the cost of highway reoccurring (peak hour) congestion due to poor surfaces and inadequate capacity, which includes the cost of delay and wasted fuel, is more than $39 billion per year. This figure increases to almost $100 billion dollars annually if you include the cost of incidents (accidents, weather, etc.) and the delay cost associated with maintenance and construction activities.

Long-term financing is the single most critical issue facing highway, bridge, and transit infrastructure. The number of vehicle trips grew by 25 percent between 1983 and 1990. Population growth explains only about 4 percent of this increase. Trips per capita account for the rest. Vehicle miles of travel grew more than 40 percent between 1983 and 1990. In addition to the increase in the number of trips, there was also a dramatic increase in vehicle trip length during this same period. Future travel growth, while projected to increase at a rate generally lower than that experienced over the past two decades, will continue to place demands on the system for additional capacity, including operating improvements, new construction, and new transit service.

Highway investment has not kept pace with increased travel. Public capital stock reflecting highway investment has remained in the $600-700 billion range since the mid-1970's. Similarly, public investment in highways in constant dollars per vehicle miles of travel (VMT) has dropped from about seven cents per VMT to 3.4 cents per VMT. Capital outlays for highways in 1991 are about the same as they were in 1965 in constant dollars. Thus, in spite of great increases in vehicle miles travelled, population, and other factors that increase the need for highway investment, long-term financing has been inadequate, resulting in highway disinvestment.

Funding Levels

In 1991, total highway investment for all levels of government was $78 billion. The capital investment by all levels of government for all highways was over $32 billion. Just maintaining current conditions would require an annual capital investment for the next 20

years of about $52 billion or $46 billion for 1992. This $46 billion figure is about $14 billion above the actual 1991 investment level.

Actually, improving current conditions and performance and eliminating the $290 billion backlog would require an average annual investment of about $67 billion or $60 billion in 1992. This $60 billion figure is about $28 billion above the actual 1991 investment level. Poor highways add as much as 40 percent to the per mile cost of operating vehicles, which translates directly into lost capital productivity. Increased investment to improve the performance of our Nation's highway system would reduce the road user costs associated with congestion, poor pavements and bridges, and inadequate connectivity to ports, airports, ports of entry and other intermodal transfer facilities.

The emphasis has been on preserving the transportation system. Much progress has been made; much more needs to be done. We are recognizing, along with other Nations, that the economy performs better with significant investment in infrastructure.

Full ISTEA funding alone will not satisfy all our highway investment requirements. A reasonable estimate is that Federal, State, and local financing will be about $12 billion lower than the investment required to maintain current levels of conditions and performance on Federal-aid highways. By not meeting this investment requirement we add to the backlog of needed improvements. This backlog causes, both now and in the future, increases in delay, operating, and safety costs.

Facilitating Improvements

The Committee asked that we delineate how the Federal government can facilitate highway and bridge infrastructure improvements, for example, by legislation, by setting standards, by innovative financing and tax policies, and by coordinating regional solutions.

To maintain our economic growth, improve the quality of life in our communities, and properly protect our environment while providing appropriate access to important natural resources, our Nation requires an adequate highway infrastructure. To develop and maintain an adequate network of highways and bridges, the Nation relies heavily on investments and policies of the Federal government.

The Federal government's role is both complex and important. By far, the single most important action that the Federal government can take to improve our Nation's highways and bridges is to successfully implement the ISTEA. This legislation establishes the Federal framework for the programs, policies, and financing for Fiscal Years 1992 - 1997. The ISTEA legislation gives the Federal government a blueprint of what it should be doing to facilitate highway and bridge improvements, and as we approach the "half way" point of ISTEA's six-year life, I think that we are making great progress.

There are a number of specific actions the Federal government should take to make sure that the Nation has the highway and bridge infrastructure it needs now and will need in the 21st Century. Let me provide some specific examples:

- The NHS - Approval of the proposed NHS is absolutely essential to "tie America together" and support our economy and way of life. Designation legislation is our highest priority.

- Full Funding - Full funding for ISTEA's core highway programs is needed to ensure adequate highway and bridge infrastructure. The Administration strongly supports full funding for FY 1995.

- Innovative Financing - On March 14, 1994, responding to the President's Executive Order on Infrastructure Investment, and Secretary Peña's commitment to it, I established an Innovative Financing Task Force, chaired by Deputy Administrator Jane Garvey. This Innovative Financing Test and Evaluation Project, notice of which we published in the April 8, Federal Register, will identify actions to encourage increased investment in transportation. The purpose of the Federal Highway Administration's (FHWA) Innovative Financing Project is to make use of ISTEA flexibility and encourage States, local governments, private investors, and the financial community to increase investment in transportation. By creating incentives, removing barriers, and employing under-utilized ISTEA provisions, we can leverage needed investment into our Nation's highways and bridges. We expect this initiative to result in projects, working models, that will provide examples of creative financing solutions. In addition, we seek to develop a base of knowledge that will help in the reauthorization process.

  The FHWA is asking the States for examples of ISTEA eligible projects which show creative financing solutions. Once identified as a priority project for the Innovative Financing Project, the project will be advanced in a normal but expedited manner. FHWA staff will work with State partners to refine financial plans to maximize the probability of successful projects. Under the Innovative Financing Project, FHWA will make full use of its ISTEA and other regulatory and statutory flexibility to advance ISTEA-eligible projects which leverage funds.

  We will examine our guidance on reconstruction and conversion of free to toll facilities, on guidance concerning ISTEA section 1044 soft-match provisions, and mechanisms that permit a State to take advantage of private cash donations and leverage private funds.

  We want to explore the generation of highway-related income by allowing States to increase joint use of airspace through the acquisition of additional adjacent lands to expand opportunities for income and economic development.

Also, we want to examine use of expanded bond financing, promotion of public/private partnerships using developer funds, and revenue streams whereby State and federal funds could be used to pay an annual "rent" to a private contractor who builds and maintains a facility.

We expect to receive our initial submissions of financing proposals from the States by April 29. We would be pleased, after we receive these submissions, to have FHWA Deputy Administrator Jane Garvey and Assistant Secretary Louise Stoll, co-chairs of the Department's innovative financing task force, appear before this Subcommittee to share the results of this project.

I would like to emphasize that while this particular effort is new, our commitment to improve financing for our highways has been on-going and is already producing results. In the past several months, two noteworthy project agreements have been made -- one in Southern California and the other in Houston, Texas, which we signed last Sunday while I was in Texas on the fact-finding trip. The California project, SR-91, involves a private firm building and operating a toll road on State-owned land. The Texas agreement, which calls for a bridge transfer and involves the Texas Turnpike Authority, Harris County, Texas, and the FHWA, commits federal funds to build 28 miles of toll roads. These roads will feed into the Shipping Channel Bridge. While our successes to date have involved mostly toll projects, we are committed to going beyond that in the future to achieve more investment in the infrastructure.

- Tax Evasion Effort - The FHWA has initiated a major effort jointly with the Internal Revenue Service and the States to reduce or eliminate motor fuel tax evasion, which is estimated to cost the Highway Trust Fund billions of dollars in lost revenue. The shortfall means that the travelling public is being cheated out of resources needed to build and maintain the Nation's transportation system. We are confident that our efforts are bearing fruit and, in combination with the recent diesel fuel dyeing, and changes in the point of diesel tax collection, we will restore much-needed trust fund revenue.

Finally, Secretary Peña announced a Strategic Plan in January 1994. Its goals provide a practical guide for the Federal role in highway and other transportation. Specifically, the goals of "tying America together" and promoting strategic investment directly relate to what the Federal government can do to provide adequate highway infrastructure.

State, Local, Private Role

The Committee asked that we outline the roles of State, local, and private resources in dealing with the revitalization of our Nation's highway and bridge infrastructure.

The Nation must rely on the State and local governments and a vigorous private sector to revitalize our highways and bridges. Events such as the California earthquake and Midwest

floods underline the fact that we must have the efforts, resources, and co-operation of every level of government to meet transportation challenges. The opening of the Santa Monica Freeway ahead of schedule shows what is possible when Federal, State, and local officials work with the private sector.

While less dramatic, the long-term revitalization of our Nation's infrastructure will require a similar partnering commitment from all levels of government and the private sector. Currently, when you compare the years 1991 and 1992, we are spending about $14 billion less than what is needed to maintain current highway and bridge conditions; and about $28 billion less than needed to improve current conditions. Clearly, State and local governments must work with the Federal government to address a problem of this magnitude.

To address this critical problem, States and local governments have taken important steps to revitalize the Nation's highways and bridges. Currently, more than 50 percent of the funds for all capital highway and bridge improvements are furnished by State and local governments. State and local spending for highway capital improvements increased at 6.5 percent more than inflation during the 1980's in spite of adverse economic conditions and competing budget priorities. States have shown their willingness to increase their own State motor-fuel taxes to address their highway needs.

The President's recent Executive Order on Infrastructure Investment (E.O. 12893) provides an overall structure for the Federal government to work more effectively with States and local governments on Federally financed projects.

We have required economic analysis on Federally financed highway projects in our Statewide planning, metropolitan planning and management systems regulations. We are currently preparing an interim life cycle cost policy statement for Federally financed projects. We are using the biennial "Condition and Performance Report" for budget analysis of different investment levels. Also, we are beginning implementation of a Highway Economic Requirements Systems (HERS) for simulating the most cost effective mix of improvements on the Nation's highways for different investment levels.

In the area of efficient infrastructure management, again the Statewide planning, metropolitan planning, and management systems requirements focus on preserving and effectively managing existing facilities. In the air quality non-attainments areas, we are emphasizing traffic demand management strategies. Additionally, we are supporting congestion pricing and innovative contracting initiatives. As mentioned earlier, our Innovative Financing Project should enable States, local governments, private investors, and the financial community to employ creative and innovative financing solutions to leverage new investments in infrastructure.

Perverse Incentives

The Committee has asked what steps we have taken to ensure that our capital assistance programs do not create perverse incentives, discouraging the use of State and local funds for maintenance activities, in anticipation of Federal funds for rehabilitation or replacement.

One of the most important elements of the ISTEA that will ensure sound investments in the Nation's infrastructure in the future is the establishment of management systems for pavement, bridge, highway safety, public transportation facilities and equipment, traffic congestion, and intermodal facilities and systems. These systems will yield strategies directed toward addressing needs and will also evaluate the effectiveness of the implemented strategies. We believe these management systems set in place a strong foundation for decisions that are not short sighted but that consider long term implications and will ensure appropriate expenditure of public funds.

The ISTEA simplified the matching requirements for Federal-aid funds, thereby minimizing any potential for "perverse incentives" in major investment strategies involving specific program or improvement types. The Interstate Maintenance Program requires that the Interstate System be maintained at appropriate levels before funds apportioned through this program can be made available for other construction activities. Certain types of preventive maintenance are eligible under this provision.

Under the Bridge Program authorized by the ISTEA, certain minimum funding is available for bridge painting, seismic retrofitting and other preventive maintenance activities. Although Federal-aid funds have traditionally not been available for ordinary maintenance, emerging research suggests that certain types of preventive maintenance can prolong the useful life of both highway and bridge facilities. As results from this continuing research become available, further consideration will be given to expanding the eligibility definitions for Federal-aid highway funds to take advantage of the long term savings that might be associated with preventive maintenance.

European Highway Building Approach

The Committee asked for our views on the pros and cons of the European approach to building highway facilities, using greater investment on the front end to assure better performance and longer useful life.

The FHWA has been actively engaged in reviewing European pavement design and evaluating applications in this country. What we found in Europe was a greater financial commitment to providing service for a longer time period. That commitment is reflected in stronger pavement designs, comprehensive maintenance, and early rehabilitation efforts applied before distress shows up in the form of potholes, rutting, etc. There are States that follow the same good practices that Europe does, and it shows in the conditions of their pavements; what we need is a consensus on the condition that is to be maintained, and the

commitment to do it. So we have learned from the European systems, and will continue to study them. In the area of safety alone, however, fatal accident statistics show our system to be measurably safer.

We will issue a policy by this summer, covering the use of life-cycle cost analysis in all aspects of project development and review. This policy will stipulate that, in addition to considerations of initial construction costs, long term maintenance costs as well as costs of repetitive maintenance and lane closings on highway users must be considered in project design. The long term impact of more stringent pavement design, modelled on European 40 and 50-year design, will be included as options that should be considered in project development.

FHWA estimates of future capital requirements to meet specified system performance standards will also address European pavement design options through the Highway Economic Requirements System (HERS). This is a marginal benefit/cost simulation model that will be used to evaluate alternate pavement designs as part of a comprehensive set of potential capital improvements to redress highway deficiencies. The result of these analyses will be presented to the Congress in future biennial reports on highways conditions, performance, and future investment requirements.

Infrastructure in Urban Areas

The Committee asked about the importance of improved highway and bridge infrastructure to the Nation's urban centers. The efficient and effective movement of people and goods, not just between urban areas but also within them, is essential. In many urban areas, this mobility is threatened by growing congestion. The 1993 Condition and Performance report found that the congestion on urban Interstates, which have become the lifelines for many cities, continues to increase, with peak-hour travel occurring under congested conditions exceeding 70 percent in 1991 compared to 55 percent in 1983.

The declining performance of roads and bridges directly affects the economy of the urban areas. Urban congestion, of course, adds costs to personal and freight transportation, and is often cited as the reason for locating in suburban, exurban or rural areas. With the advent of just-in-time production and distribution systems, the survival of American firms in this era depends on the reliability of truck shipments, and access and reliability of shipments can often be the deciding factor when a firm locates a facility. These shifts often occur at the expense of urban centers. Crumbling infrastructure in urban centers also dampens tourism which has become a major revenue generating activity of urban centers. The old downtown areas with their diversity, culture, and history attract visitors that depend on well-functioning roads and bridges, as well as other transportation.

Another emerging problem of the urban centers that can, in part, be eased by better functioning highway systems, is the drop in employment opportunities in the city contrasted with the growth in jobs in the suburbs. The movement of city center residents to these jobs

is critical. Since much of the job growth occurs beyond the reach of fixed transit facilities, the workers rely on highways, that are used by buses and vans as well as cars, for access. Better functioning highway systems will translate into more job opportunities for center city residents.

We believe the life of urban centers depends in great part on well functioning transportation systems. Not only highways but also transit, railroads, ports, and intermodal transportation become increasingly important. Transfers of highway funds to transit and vice versa, permitted by the ISTEA, give the States and local governments the opportunity to choose the best transportation solution, regardless of mode, for their transportation needs. Since the enactment of the ISTEA, about $1 billion of Federal-aid highway funds have been transferred to transit projects. In addition to the funding flexibility options, the management systems and planning provisions instituted by the ISTEA lead the way to better transportation decisions in urban areas. We believe the result will be transportation improvements that will invigorate cities as well as other areas.

Executive Order 12875, Enhancing the Intergovernmental Partnership

Finally, I'd like to briefly highlight the efforts we have made in response to Executive Order 12875, "Enhancing the Intergovernmental Partnership," to reduce the imposition of unfunded Federal mandates and to minimize their effect on State and local infrastructure investment strategies. The FHWA has long supported the goal of the Executive Order to provide regular and meaningful consultation and collaboration with State, local, and tribal governments on Federal matters that affect their communities. We recognize that this partnership is crucial to the success of many of the innovative programs provided for in the ISTEA.

Through the Federal-aid highway program, the FHWA provides grants to States, ranging between 80 to 95 percent of project costs, for a wide range of surface transportation projects, from traditional highway construction projects to activities that enhance the environment and contribute to meeting air quality standards.

The FHWA has a long history of consultation and coordination with the States in the successful development of the Federal-aid highway program. In addition to the FHWA's collaboration with the States on all facets of the development of the Federal-aid highway program, States have retained primary project decisionmaking authority under the federally aided State program model that has been developed.

The ISTEA marks the beginning of a new era of even closer collaboration with State, local, and tribal governments. For example, the Statewide and metropolitan planning programs and the six management systems requirements of ISTEA recognize the central role of States and local governments in determining how Federal funds are spent on surface transportation projects in their communities. States, metropolitan planning organizations, and transit operators, in developing long-range transportation plans and transportation improvement

plans, maintain primary control over their own infrastructure investment decisions. Moreover, Federal funds are provided to cover the costs of implementing the planning and management systems requirements.

Essentially, the Federal-aid highway program is a Federal-State cooperative grant program, thus it carries no "mandates" per se. Admittedly, if a State wishes to receive Federal grant money, it must meet the conditions of the grant, but the Federal funds received by States offset the costs of such "mandates." As noted above, the Federal share of project costs far exceeds the State's share; typically, the Federal contribution will cover between 80 and 95 percent of the cost of Federal-aid highway projects.

I recognize that under the Federal-aid highway program, States must comply with certain minimum Federal environmental and labor requirements, such as the National Environmental Policy Act, the Clean Air Act, and the Davis-Bacon Act. There are definite and perhaps quantifiable costs associated with this compliance. However, the States, in addition to the Federal government, are certainly beneficiaries of participatory environmental decisionmaking, cleaner air, and the payment of prevailing wage rates. In my opinion, highway projects which are (1) developed through a consensus-building planning process, (2) designed to improve air quality, and (3) built to ensure the safe and rapid transport of people and goods answer the President's call to ensure the long-term prosperity of the Nation through strategic infrastructure investment.

Conclusion

In closing, I would like to emphasize that after having traveled over some 3500 miles of our Nation's highways and with the benefit of conversations with hundreds of knowledgeable local officials and interested fellow citizens, my conviction is that we must continue to invest in the vital infrastructure that we have in place and that we need to officially designate an NHS. For vast areas of the United States, urban and rural, efficient highway transportation is the only form of freight and personal transportation available. For those metropolitan areas and regions blessed with other modes of transportation, highways are the vital connecting link necessary to connect modes and to begin or complete a trip. The economic benefits which the NHS will provide through good highway access were evident to me all across the country. Further, safety of the traveling public will also be served through design improvements to the NHS and existing highways.

I look forward to the day when this Committee and the Congress takes its place in transportation history by designating the NHS. I am convinced that just as historians look back on establishment of the Interstate Highway System as a major infrastructure event, so will they evaluate the creation of the NHS. I am certain that these infrastructure investment hearings will confirm my belief that the valuable highway system created under the leadership of this Committee will be maintained and will prosper to serve us and future generations.

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STATE	CITY	PROJECT	FUNDS OBLIGATED STP	CMAQ	OTHER	STATE TOTAL
ALABAMA	MONTGOMERY	TRANSIT CAPITAL IMPROVEMENTS	501,476	0	0	
	MONTGOMERY	TRANSIT IMPROVEMENTS	2,792,000	0	0	
	MONTGOMERY	TRANSIT IMPROVEMENTS	0	1,535,000	0	
	MONTGOMERY	TRANSIT CAPITAL IMPROVEMENTS	504,386	0	0	
	MONTGOMERY	TRANSIT CAPITAL IMPROVEMENTS	75,914	0	0	5,408,776
ALASKA	FAIRBANKS	PURCHASE TWO LIFT-EQUIPPED BUSES	243,000	0	0	
	FAIRBANKS	PURCHASE OF TRANSIT VEHICLES	0	1,966,982	0	2,209,982
ARIZONA	TUCSON	PURCHASE TWO BUSES	600,000	0	0	
	TUCSON	PURCHASE BUSES, BIKE RACKS	1,791,700	0	0	
	TUCSON	PURCHASE 4 BUSES-3 VANS	1,386,682	0	0	
	MARICOPA	PURCHASE 18 BUSES	0	999,580	0	
	MARICOPA(PHOENIX)	UPGRADE AND REFURBISH BUSES	0	5,700,000	0	
	MARICOPA(PHOENIX)	PURCHASE BUSES, RADIOS, FAREBOXES	0	5,450,000	0	15,927,962
CALIFORNIA	SACRAMENTO	DESIGN/CONST NATURAL GAS FUEL STN	1,200,000	0	0	
	SAN LUIS OBISPO	PURCHASE TWO CNG BUSES	468,000	0	0	
	BAYFAIR HAYWARD	GRANT APPLICATION	2,887,300	913,600	0	
	BAYFAIR HAYWARD	GRANT APPLICATION	0	0	0	
	AREAWIDE	PURCHASE 12 FULL SIZED BUSES	0	2,130,000	0	
	COUNTYWIDE	PURCHASE FIVE BUSES	0	4,221,450	0	
	OELANO	PURCHASE PASSENGER VEHICLES	0	252,311	0	
	SANTA MARIA	PURCHASE 1 CNG BUS	0	176,000	0	
	COUNTYWIDE	BUS REPLACEMENT	0	264,727	0	
	RIVERSIDE	SITE IMP. @CNG FUELING	0	400,000	0	
	SAN JOSE	DESIGN DOUBLE TRACKING	400,000	0	0	
	WATSONVILLE	DESIGN & RESTORATION	0	177,000	0	
	SANTA CRUZ	FTA TRANSFER / BUS PURCHASE	0	991,000	0	
	SAN DIEGO	REPLACE BUSES AND SIGNS	531,000	0	0	
	SAN DIEGO	REPL OLD BUSES & SIGNS, BUS STOPS	0	9,269,000	0	
	SAN DIEGO	CONST BUS CIR & PURCHASE BUSES	0	1,766,800	0	
	FRESNO	PURCHASE 20 BUSES	0	2,205,000	0	
	STOCKTON	BUS PURCHASE AND COMMUTER SERVICE	0	3,753,600	0	
	STOCKTON	PURCHASE BUSES	0	1,640,688	0	
	CITYWIDE	PURCHASE 2 BUSES	0	123,942	0	
	SAN BERNARDINO	PURCHASE 3 BUSES/20 SHELTERS	0	224,000	0	
	N/A	PURCHASE BUSES	0	260,610	0	
	STANILAUS	AUTOMATIC VEHICLE LOCATER	0	79,916	0	
	MERCED	PURCHASE BUSES	0	101,200	0	
	MONTEREY COUNTY	PURCHAS BUSES, INSTALL BIKE RACKS	680,000	0	0	
	STOCKTON	TRANSIT MALL UPGRADE	160,000	0	0	
	HOLLYWOOD	CONT. TRANSITWAY	21,576,000	0	0	
	TULARE	PURCHASE 2 BUSES	0	97,383	0	
	SAN FRANCISCO	CONST. MINI TURNAROUND	3,400,000	0	0	
	SAN FRANCISCO	CONT. MINI TURNAROUND	0	5,400,000	0	
	SANTA BARBARA	PURCHASE SHUTTLES CONVERT TO CNG	0	523,035	0	
	STATEWIDE	TRANSFER CNTRS/FARE COLLECTION SYS	468,700	0	0	
	SACRAMENTO	REGIONAL TRANSIT PROJECTS	2,183,954	0	0	
	SANTA CLARA	REPLACE STORAGE TANK & BUS YARD	3,600,000	0	0	
	LOS ANGELES	MTA BUY REPL BUSES	13,247,000	0	0	
	COUNTYWIDE	PURCHASE 6 ALTERNATIVE FUEL BUSES	1,320,000	0	0	
	SAN FRANCISCO/OAKLAND	BUS PURCHASE	1,736,400	0	0	
	COUNTYWIDE	ELECTRONIC TROLLEY BUS PROGRAM	0	8,300,000	0	
	OJAI	PURCHASE 2 TROLLY BUSES	0	177,060	0	
	STATEWIDE	TRANSFER CNTRS/FARE COLLECTION SYS	0	7,974,400	0	
	LOS ANGELES	MTA BUY REPL BUSES	0	35,034,000	0	
	SAN RAFAEL	PARK AND RIDE LOT	0	400,000	0	
	SACRAMENTO	REGIONAL TRANSIT PROJECTS	0	4,418,135	0	
	GOLDEN EMPIRE	CONSTRUCTION CNG FUELING STATION	0	1,360,000	0	
	BAKERSFIELD	PURCHASE & RETROFIT BUSES FOR CNG	0	1,150,890	0	
	VENTURA	VISTA DEMO, BUY BUSES	0	2,859,060	0	
	SO. CALIFORNIA	PURCHASE 210 BUS RADIOS	0	932,800	0	
	FOOTHILL TRANSIT ZONE	LEASE OF 162 COACHES	0	4,220,000	0	
	LOS ANGELES	PURCHASE 8 BUSES	0	1,840,000	0	
	FRESNO	PURCHASE 2 PASSENGER VEHICLES	0	141,559	0	
	FRESNO	PURCHASE PASSENGER VEHICLES	0	283,296	0	
	VENTURA	PURCHASE 5 BUSES-GRANT	0	1,128,757	0	
	YOLO	RETROFIT BUSES FOR ADA COMPLIANCE	133,650	0	0	
	SANTA ROSA	BUS REHAB/PURCHASE	800,000	0	0	
	NAPA	PURCHASE 6 BUSES	1,115,100	0	0	

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	SONOMA	PURCHASE 15 BUSES	3,520,000	0	0	
	N/A	PROPERTY ACQ. TRANSIT FAC	130,000	0	0	
	N/A	AUTO DISPATCH ROUTING SYSTEM	70,500	0	0	
	SANTA CRUZ	BUS PURCHASE	40,000	0	0	
	SAN LUIS	REHABILITATE 10 TRANSIT BUSES	81,500	0	0	
	N/A	PURCHASE BUSE	200,000	0	0	
	YOLO	RETROFIT BUSES FOR ADA COMPLIANCE	0	885,300	0	
	LOMPOC	CNG BUSES/RETROFIT	0	988,000	0	
	LOS ANGELES	OPERATING ASSISTANCE	0	2,740,100	0	
	CITYWIDE	PURCHASE OF 6 BUSES	0	552,000	0	
	SANTA CLARA	BUS LEASE	0	769,600	0	
	MISSION VALLEY	CONSTRUCT MISSION VALLEY LINE	0	1,770,600	0	
	N/A	PARK & RIDE LOTS/2 OWFO CNTR	0	2,000,000	0	
	LOS ANGELES	PURCHASE 29 BUSES; CA-90-X576	0	4,111,400	0	
	SACRAMENTO	PURCHASE BUSES AND YARD	0	1,055,000	0	
	N/A	TWO PARK & RIDE LOTS, OWFO CNTR	0	0	2,032,800 S/	181,802,923
COLORADO	DENVER	TRANSPORTATION IMPRO PROG	62,000	0	0	
	STATEWIDE	METRO TRANSIT	33,000	0	0	
	STATEWIDE	METRO TRANSIT	33,000	0	0	
	BOULDER	TRANSIT	912,000	0	0	1,040,000
CONNECTICUT	HARTFORD	UNION STATION REHAB	61,832	0	0	
	N/A	GRIFFIN LINE STUDIES	120,000	0	0	
	BRIDGEPORT	REPLACE PECK BRIDGE	0	14,173,600	0	
	HARTFORD	PURCHASE BUS	0	4,454,400	0	
	HARTFORD	PURCHASE BUSES	0	75,200	0	
	HARTFORD	PURCHASE BUSES/RADIO/BOXES	0	540,800	0	
	HARTFORD	PURCHASE BUSES/YARD	0	183,200	0	
	BRIDGEPORT	REPLACE PECK BRIDGE	8,774,630	0	0	
	HARTFORD	COMMUTER EXPRESS BUSES	0	8,442,400	0	36,826,062
DIST. OF COL.	WASHINGTON	PROCUREMENT OF NEW REPL. BUS	3,400,000	0	0	
	WASHINGTON	PROCUREMENT OF NEW REPL. BUS	0	1,800,000	0	
	WASHINGTON	PROCUREMENT OF NEW REPL. BUS	0	3,800,000	0	9,000,000
FLORIDA	PINELLAS COUNTY	BUS PURCHASE	0	4,455,808	0	
	ORLANDO	MAINTENANCE FACILITY	600,000	0	0	
	N/A	FTS TRANSFER-BUS ENG	0	240,000	0	
	N/A	FTS TRANSFER-BUS PURCHASE	0	1,838,400	0	7,134,208
GEORGIA	ATHENS	TRANSIT IMPROVEMENT	394,955	0	0	
	SAVANNAH	TRANSIT PROGRAM	1,372,784	0	0	
	ATHENS	TRANSIT PROJ	110,000	0	0	
	ATLANTA	TRANSIT PROJECT	3,816,000	0	0	
	N/A	TRANSIT PROJ	0	240,000	0	
	N/A	TRANSIT PROJ	0	947,200	0	4,880,939
HAWAII	MAUI/KAUAI	TRANSFER TO TRANSIT FTA	1,290,000	0	0	1,290,000
IDAHO	BOISE	PURCHASE NATURAL GAS BUS	0	870,000	0	
	COEUR D'ALENE	NORTH ID. COMMUNITY EXPRESS VANS	0	91,000	0	
	TWIN FALLS	TRANSPORTATION IV BUSES (4)	0	407,920	0	
	BOISE	PURCHASE NATURAL GAS BUS/ FUEL EQUIP.	0	1,923,200	0	
	BOISE	FUEL DEPOT FOR NAT. GAS BUSES	0	480,000	0	
	POCATELLO	NATURAL GAS BUS FUEL EQUIP.	0	216,000	0	
	KOOTENAI	NORTH ID COMMUNITY EXPRESS VAN	0	79,200	0	
	CANYON COUNTY	COUNTY BUS TRANSPORTATION	0	401,600	0	
	MCCALL AREA	VALLEY TRANSIT BUSES	0	80,546	0	4,749,466
ILLINOIS	CHICAGO	COMMUTER LOT	0	3,900,000	0	
	CHICAGO	PURCHASE 45 BUSES	0	7,000,000	0	
	CHICAGO	PURCHASE 200 VANS	0	3,900,000	0	
	CHICAGO	COMMUTER PARKING LOTS STATIONS	262,500	0	0	
	CHICAGO	PARK-N-RIDE	225,000	0	0	
	CHICAGO	CONCEPTUAL DESIGN/PLAN FOR EXP	62,500	0	0	
	CHICAGO	PRELIMINARY LAND ACQU	52,000	0	0	
	CHICAGO	PURCHASE 100 BUSES & PARTS	0	18,343,032	0	
	CHICAGO	COMMUTER PARKING LOTS AND ST	0	9,462,400	0	
	CHICAGO	BUS PURCHASE & STATIONS	0	3,359,960	0	
	CHICAGO	PRELIMARY ENG LAND ACQU	0	2,050,400	0	

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	CHICAGO	PRELIMARY ENG LAND ACQU	0	269,600	0	
	CHICAGO	PE LAND ACQU	0	2,036,000	0	
	CHICAGO	PRELIMINARY ENGINEERING	0	299,280	0	
	CHICAGO	VAN POOL SERVICES	0	84,825	0	
	CHICAGO	CON PK LOTS CONS R	0	18,830,400	0	
	CHICAGO	MARKET PROG RAPID TRANSIT PE	0	420,000	0	70,557,817
INDIANA	GARY	TWO 35' LNG BUSES W/LIFT	0	420,000	0	
	GARY	REMANUFACTURE BUS 40' W/LIFT	0	96,000	0	
	GARY	REPLACE 3 DIESEL BUSES W/ LIFTS	0	480,000	0	
	HAMMOND	CENTRAL BUS. LINK-UP	0	86,760	0	
	SOUTH SHORE	81 DIRECTIONAL SIGNALING ON SOUTH	0	1,200,000	0	
	SOUTH SHORE	SIGNAL CONVERSION ON SOUTH SHORE	0	96,000	0	
	SOUTH SHORE	PARK-N-RIDE FAC ON S. SHORE RR	0	72,000	0	2,450,760
IOWA	STATEWIDE	BUS PURCHASES	0	0	50,000 1/	
	STATEWIDE	BUS PURCHASES	0	0	57,996 1/	107,996
KENTUCKY	STATEWIDE	PUBLIC TRANS.	1,200,000	0	0	
	STATEWIDE	PUBLIC TRANS.	0	3,929,520	0	
	ASHLAND	PURCHASE BUSES- ADD EQUIPMENT	0	344,000	0	5,473,520
LOUISIANA	STATEWIDE	N/A	753,645	0	0	
	SHREVEPORT	TRANSFER TO FTA	1,259,000	0	0	
	NEW ORLEANS	TRANSFER TO FTA	2,500,000	0	0	
	NEW ORLEANS	TRANSFER TO FTA	2,500,000	0	0	
	NEW ORLEANS	TRANSFER TO FTA	1,600,000	0	0	8,612,645
MAINE	PORTLAND	BUS PURCHASE	449,568	0	0	
	PORTLAND	RADIO PURCHASE	44,154	0	0	
	PORTLAND	FAREBOX & EQUIPMENT PURCHASE	160,961	0	0	654,683
MARYLAND	BALTIMORE	REFURBISH/PURCHASE RAIL EQUIP	0	11,306,660	0	11,306,660
MASSACHUSETTS	CANTON	INTERMODAL STATION IMPV. BY MBTA	935,000	0	0	
	STATEWIDE	ACCESSIBILITY IMPV'S CONST. MBTA	588,150	0	0	
	GLOUCESTER	GRADE CROSSING IMPV'S CONS. BY MBTA	120,000	0	0	
	LINCOLN	GRADE CROSSING IMPROVEMENTS MBTA	120,000	0	0	
	OLD COLONY	FIXED RAIL TRANSIT BY MBTA	0	21,040,000	0	
	STATEWIDE	INTERMODAL PARKING FACILITIES MBTA	0	6,560,000	0	
	STATEWIDE	INTERMODAL IMPV'V TO WESTFORD STA.	0	2,880,000	0	
	WORCESTER	PE & ROW TRANS CENTER ADA BY MBTA	0	800,000	0	
	SOUTH STATION	CONS. UNDER THE DIR OF THE MBTA	0	27,200,000	0	
	BOSTON	FIXED RAIL TRANSIT BY MBTA	0	23,760,000	0	
	BOSTON	ADA KEY STATION PLAN MBTA	0	588,151	0	84,591,301
MICHIGAN	DETROIT	PURCHASE 14 SM. BUSES	1,080,000	0	0	
	ANN ARBOR	HOV FACILITY	60,000	0	0	
	DETROIT	TEN SMALL BUSES	800,000	0	0	
	SOUTHEAST	SMART PATHWAY	24,000	0	0	
	UNION DEPOT	TRAIN DEPOT	554,970	0	0	
	IONIA CO	PURCHASE FACILITY & RENOVATE	98,391	0	0	
	KALAMAZOO	EQUIP & TOOLS FOR BUSES	20,000	0	0	
	TWIN CITIES	SECURITY SYS OFFICE EQUIP.	37,840	0	0	
	MASON CO	TWO FUEL TANKS/COMPUTER/PRINTER	37,760	0	0	
	OTTAWA CO	BUS WASHER	10,400	0	0	
	SOUTHEASTERN	PURCHASE 8 BUSES	0	1,536,000	0	
	DETROIT	PURCHASE 12 DIESEL COACHES	0	2,304,000	0	
	GRAND RAPIDS	PURCHASE 6 30' BUSES	0	768,000	0	
	GRAND RAPIDS	CBD TICKET PROGRAM	0	50,000	0	
	GRAND RAPIDS	PARK AND RIDE LOTS	0	64,000	0	
	ANN ARBOR	TRAVEL DEMAND MANAGE PROGRAM	0	120,000	0	
	ANN ARBOR	CAR POOL LOT	0	80,000	0	
	MUSKEGON	BUS PURCHASE	0	192,000	0	
	DETROIT	FOURTEEN BUSES	0	1,979,800	0	
	GRAND RAPIDS	BUS REPLACEMENT	0	300,000	0	
	GRAND RAPIDS	EXPAND RTRANSIT SERVICES	0	298,000	0	
	ANN ARBOR	BUS REPLACEMENT	0	180,000	0	
	ANN ARBOR	TRAVEL DEMAND MGT STUDY	0	128,000	0	
	JACKSON	SMALL BUS W/LIFT, BUS PARTS	69,334	0	0	
	JACKSON	SM BUS W/LIFT 21'	48,800	0	0	

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	JACKSON	TWO MINI VANS	32,000	0	0	
	JACKSON	BUS COMPONENT PARTS	29,280	0	0	
	VAN BUREN	ENLARGE PARKING AREA	11,501	0	0	
	BEXFORD	OFFICE FURNITURE	6,400	0	0	
	OSTEGO CO.	MAINTENANCE EQUIP.	5,000	0	0	
	SHIAWASSEE CO.	PASSENGER SHELTER & LOAD PAD	6,000	0	0	
	MECOSTA	COMPUTER AND FURNITURE	3,600	0	0	
	OSCODA CO.	COMPUTER SOFTWARE AND TYPEWRITER	8,000	0	0	
	OCEANA CO.	RESURFACE PARKING AREA	54,400	0	0	
	NEWAYGO	COMMUNICATION SAFETY EQUIP.	800	0	0	
	MECOSTA	FACILITY REPAIRS	5,392	0	0	
	MENOMINEE/DELTA	PURCHASE 3 AUX. HEATERS	4,000	0	0	
	CHIPPEWA/LUCE	ONE BUS SHELTER	4,000	0	0	
	MANISTEE CO.	HOIST REPAIR	6,320	0	0	
	GREATER LAPEER	PURCHASE 2 RADIOS	2,000	0	0	
	LENAWEE	PORTABLE POWER WASHER	4,500	0	0	
	ISABELLA CO.	UPGRADE LEAD DETEC. EQUIP.	8,000	0	0	
	YATES DIAL-A-RIDE	TRACTOR WITH MOWER	25,600	0	0	
	HURON	PURCHASE RIDING LAWN MOWER	2,000	0	0	
	DICKINSON IRON	FEASIBILITY STUDY	10,000	0	0	
	GLADWIN CO.	PARKING LOT GRAVEL	9,600	0	0	
	GOGEBIC CO.	ONE VEHICLE MOBILE RADIO UNIT	2,160	0	0	
	CRAWFORD CO.	COMPUTER EQUIP.	8,000	0	0	
	DELTA AREA	COMPUTER HORE/SOFTWARE	45,960	0	0	
	BERRIEN CO.	VENTILATION EQUIP.	18,800	0	0	
	EUPIA/SAULT	BUS SHELTER	6,400	0	0	
	N/A	PAVE DRIVEWAY/LOT	20,000	0	0	
	N/A	HOIST EQUIP INSTALLATION	22,500	0	0	
	N/A	GARAGE LIGHT/HEAT/GATE	16,800	0	0	
	N/A	COPIER	4,000	0	0	
	N/A	PAVE PARKING LOT	9,760	0	0	
	N/A	EIGHT PASSENGER SHELTERS	19,200	0	0	
	N/A	FACILITY BAY DOOR	5,600	0	0	
	N/A	COMPUTER EQUIPMENT	3,200	0	0	
	N/A	PAVE LOTPAVE LOT/ACCESS/PORTABLE RADIO	6,400	0	0	
	N/A	NEW DRAIN	8,000	0	0	
	N/A	UPDATE RADIO AND ANTENNA	28,000	0	0	
	N/A	HEATING/LIGHTING MAINTENANCE	8,900	0	0	
	N/A	COMMUNICATION EQUIPMENT	7,320	0	0	
	N/A	BUS GARAGE, COMPUTER EQUIP	20,000	0	0	
	N/A	MAINTENANCE EQUIP	9,600	0	0	
	N/A	PAVE LOT/OFFICE EQUIP	9,000	0	0	
	N/A	PAVE PARKING/DRIVE AREA	13,100	0	0	
	N/A	COMMUNICATION/MAINTENANCE EQUIP	5,360	0	0	
	N/A	BOARDING CHAIRS, REPAIRS	5,600	0	0	
	BARRY CO.	TRANSIT COMPUTER	8,000	0	0	
	BAY CO.	LIFT EQUIPPED VAN	26,400	0	0	
	INTER URBAN	BUS WASHER	10,400	0	0	
	THUNDER BAY	COPIER AND OFFICE EQUIP.	2,000	0	0	
	ALLEGAN CO.	PURCHASE COMPUTER SOFTWARE	2,400	0	0	
	ALLEGAN CO.	PURCHASE VAN W/ACCESS FOR 2-3 WHEEL	31,600	0	0	
	ALLEGAN CO.	TELEPHONE SEQUENCER	800	0	0	
	ALLEGAN CO.	COPIER AND OFFICE EQUIPMENT	2,000	0	0	11,478,948
MINNESOTA	DULUTH	MALL HUB SYSTEM AND BIKE RACKS	0	344,000	0	
	ST. PAUL	CONST. BUS SHELTERS	0	938,961	0	
	ST. PAUL	TRANSIT HUB	0	554,108	0	
	VICINITY TH610	PARK & RIDE LOT	370,400	0	0	
	TWIN CITIES	LIGHTING MAJOR BUS STOPS	0	199,998	0	
	SEVEN COUNTY	SYSTEMWIDE BUS STOP SIGN	0	1,223,200	0	
	ST. PAUL	CAPITAL PROJECTS	2,800,000	0	0	
	DULUTH	FIVE BUS REPLACEMENTS	0	960,000	0	
	DULUTH	PARK AND RIDE LOTS	0	48,000	0	
	DULUTH	TRAM SHUTTLE VEHICLES	0	68,000	0	
	DHI394	BUS SERVICE STARTUP	0	2,400,000	0	9,906,667
MISSOURI	LAMBERT & STCHS	METRO LINK STUDY	0	160,000	0	
	LAMBERT & STCHS	ALT AMA STDY LAMBERT ARPDT	0	160,000	0	320,000
MONTANA	MISSOULA	REPLACE BUSES,SIGNAGE BUS SHELTERS	0	840,800	0	840,800

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NEBRASKA	OMAHA	PURCHASE TRANSIT BUSES	400,000	0	0	400,000
NEW JERSEY	STATEWIDE	HISTORIC RAIL STATION	4,000,000	0	0	
	STATEWIDE	PURCHASE DIESEL LOCOMOTIVE	0	13,000,000	0	
	STATEWIDE	SIGNAL SYSTEM UPGRADE	0	17,000,000	0	
	STATEWIDE	IMPLEMENT NONTRADITIONAL TRANSIT	0	5,000,000	0	
	STATEWIDE	UPGRADED TRANSIT SERVICE	0	5,000,000	0	
	STATEWIDE	EMPLOYER TRIP REDUCTION	0	1,500,000	0	
	STATEWIDE	RAIL STATION IMPROVEMENTS	4,761,000	0	0	
	STATEWIDE	FTA EXPERIMENTAL SERVICES	0	2,500,000	0	52,761,000
NEW MEXICO	GALLUP	RENOVATION OF R/R DEPOT	400,000	0	0	
	ALBUQUERQUE	TRANSIT RELATED	0	1,309,600	0	1,709,600
NEW YORK	NEW YORK CITY	DESIGN & CONST VARIOUS CAPITAL	26,700,000	73,300,000	100,000,001 1/	
	DUTCHESS COUNTY	TRANSFER TO FTA-BUS SHELTERS	0	116,000	0	
	DUTCHESS COUNTY	TRANSFER TO FTA-BUS PURCHASE	0	400,000	0	
	DUTCHESS COUNTY	TRANSFER TO FTA-MARKETING	0	61,000	0	
	NEW YORK CITY	TRANSFER TO FTA-OPERATING COST	0	219,400	0	
	WESTCHESTER	BUS STOP IMPROVEMENT	80,000	0	0	
	WESTCHESTER	BUS PURCHASE	1,984,000	0	0	
	GLEN FALLS	TROLLEY BUS PURCHASE-TRANSFER TO FTA	240,000	0	0	
	SARATOGA COUNTY	TRANSFER TO FTA FOR BUS PURCHASE	1,048,000	0	0	
	GLOVERSVILLE	STP TRANSFER TO FTA	48,000	0	0	
	NEW YORK-NORTHEASTERN	BUS GARAGE-STP TRANSFER	22,704,988	0	0	
	NIAGARA	3 PARK AND RIDE LOTS	0	492,000	0	
	CAPITAL DISTRICT	TRANSIT PROJECTS WITH CMAQ TRANSFER	0	2,108,000	0	
	NASSAU COUNTY	BUS PURCHASE	0	2,129,600	0	
	NEW YORK	TA STATION REHABILITATION	19,570,000	0	0	
	DUTCHESS COUNTY	BUS PURCHASE	800,000	0	0	
	CAPITAL DISTRICT	TRANSIT PROJECTS	0	1,400,000	0	
	NEW YORK CITY	TRANSIT ROUTE EXPANSION	0	350,000	0	
	NEW YORK CITY	BUS CENTER TERMINAL COMPLETION	0	840,000	0	
	NEW YORK CITY	BUS PURCHASE	0	1,440,000	0	
	NEW YORK CITY	LIRR STATION REHABILITATION	0	2,400,000	0	
	NEW YORK CITY	LIRR PLATFORM 11 EXTENSION	0	7,050,000	0	
	NIAGARA FRONTIER	TRANSIT IMPROVEMENTS	0	5,902,400	0	
	N/A	STP TRANSFER TO TRANSIT	1,600,000	0	0	
	N/A	STP TRANSFER TO TRANSIT	480,000	0	0	
	UTICA-ROME	BUS AND VEHICLE REPLACEMENT	354,400	0	0	
	POUGHKEEPSIE	BUS REHAFCTR	0	300,000	0	
	POUGHKEEPSIE	DEMO PR ADM	0	448,000	0	
	N/A	STP TRANSFER TO TRANSIT	144,000	0	0	
	SYRACUSE	TRANSFER OF FUNDS	0	5,518,400	0	
	NEW YORK CITY	TRANSFER OF FUNDS TO TRANSIT	0	23,030,160	0	303,258,349
NORTH CAROLINA	DURHAM	TRANSIT PROJECT	160,000	0	0	160,000
OHIO	N/A	CAPITAL IMPROVEMENTS	84,400	0	0	
	N/A	PARK & RIDE LOTS	7,189,000	0	0	
	COLUMBUS	ST ADMIN SCHOOL BUSES/VANS/MAINT. FAC	1,298,977	0	0	
	COLUMBUS	PE	193,600	0	0	
	COLUMBUS	20 LIFT EQUIP BUSES	0	3,500,000	0	
	CLEVELAND	PASSENGER ACCESSWAY	0	8,648,000	0	
	STATEWIDE	STUDY, FIXED GUIDEWAY TRANSIT SYSTEM	600,000	0	0	
	SORTA	PARK, RIDE AND ROWA	2,750,000	0	0	
	COLUMBUS	48 BICYCLE STORAGE LOCKERS	0	650,000	0	
	AKRON	PURCHASE RAIL LINE	788,574	0	0	
	CLEVELAND	CONSTRUCT CWG FUELING FACILITY	0	2,400,000	0	
	STATEWIDE	TWO PARK AND RIDE LOTS	800,000	0	0	
	STATEWIDE	PIDESHARE FEASIBILITY STUDY	20,000	0	0	
	RICHLAND CO.	PURCHASE 7 BUSES	133,850	0	0	
	EUCLID	PARK AND RIDE LOTS	0	4,800,000	0	
	TOLEDO	BUS REPLACEMENT - 20 BUSES	3,440,000	0	0	
	CLARK CO.	PURCHASE 5 HEAVY BUSES	95,000	0	0	
	EUCLID	COMMUTER BUS SERVICE	0	445,055	0	37,844,456
OKLAHOMA	OKLAHOMA CITY	FUND TRANSFER	0	400,000	0	
	TULSA	FUND TRANSFER	0	400,000	0	800,000
OREGON	PORTLAND	BUS PURCHASE	485,000	0	0	

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	PORTLAND	RIDESHARE	0	535,000	0	
	SALEM	BICYCLE RACK PURCHASE	21,600	0	0	
	TRIMET	BUS PURCHASE	0	3,768,000	0	
	CORVALLIS	BUS PURCHASE	480,000	0	0	
	SALEM	BUS RETROFIT-ADA LIFTS	100,320	0	0	5,389,920
PENNSYLVANIA	VAR MUNICIPALITIES	PURCHASE 10 MINI BUSES	648,000	0	0	
	VAR MUNICIPALITIES	STUDY RAIL CORRIDORS-CAT BUS	100,000	0	0	
	ALLENTOWN	PURCHASE LIFT VEHICLES	400,000	0	0	
	NORTH HAMPTON	CAQ FUNDS TRANSFER TO FTA	0	648,000	0	
	VILLANOVA	SMALL BUS SERV CIRCULATOR DEMO	0	108,000	0	
	PHILADELPHIA	TRANSITCHEK PROGRAM	0	370,000	0	
	AMTRAK TRANSIT	MARKETING/ADVERTISING	0	20,000	0	
	CALIFORNIA	PURCHASE HANDICAP ACCESSIBLE BUS	0	200,000	0	
	AREA WIDE	BIKE RACKS/ENHANCE INTERMOD. CONNCT.	24,000	0	0	
	AREA WIDE	PED & BIKE TRAIL	288,000	0	0	
	OVERBROOK FARMS	RENOVATE TRAIN STATION	800,000	0	0	
	N/A	BRIDGE REHABILITATION	280,000	0	0	
	VARIOUS	PURCH BICYCLE RACKS FOR LANTA BUSES	10,000	0	0	
	CHESTER	TRAIN STATION RENOVATIONS	432,000	0	0	
	PENN SQUARE	BUS BERTHS	0	600,000	0	
	AREA WIDE	PRE-ENG/KEY PORT AUTHORITY	0	0	9,721,600 3/	
	AREA WIDE	ANALYSIS ERG-KEY	0	0	3,876,510 3/	
	AREA WIDE	TRANSPORTATION TERMINAL	0	0	15,456,000 5/	34,182,110
RHODE ISLAND	KINGSTON	TRANSIT SERVICE	0	1,200,000	0	
	STATEWIDE	TRANSIT SERVICE	0	0	6,668,430 4/	7,868,430
TENNESSEE	MEMPHIS	MPO PRIORITY 7	400,000	0	0	
	CHATANOOGA	MPO PRIORITY L AND 8	600,000	0	0	
	MEMPHIS	MPO PRI 6, SUB TRANS/TRANSIT	320,000	0	0	
	CHATANOOGA		39,600	0	0	1,359,600
TEXAS	FORT WORTH	TRANSF PROJ TO FTA FOR OVERSIGHT E	0	0	6,005,200 3/	
	FORT WORTH	BUSES	0	1,000,000	0	
	FORT WORTH	TRAVEL DEMAND MANAGEMENT	0	100,000	0	
	AUSTIN	FEASIBILITY STUDY	132,000	0	0	
	GALVESTON	TROLLEY ROUTE EXTENSION	0	484,013	0	
	WOODLANDS	EXPAND PARK AND LOT RIDE	0	580,000	0	
	EL PASO	CONST. TRANSIT/PED TERMINALS	0	5,356,000	0	
	FORT WORTH	REPLACE 12 BUSES	0	3,080,000	0	
	FORT WORTH	RIDE SHARE PROGRAM	0	156,000	0	
	FORT WORTH	LAKE WORTH PARK AND RIDE	0	320,000	0	
	HOUSTON	CONSTRUCT PARK AND RIDE LOT	0	1,635,000	0	
	WOODLAWN	CONSTRUCT PEDESTRAIN; TRANSIT WAY	0	1,106,000	0	
	DALLAS	PURCH ALTERNATE FUEL BUSES	0	7,560,000	0	27,512,213
UTAH	STATEWIDE	PURCHASE 10 BUSES 20 VANS	0	2,400,000	0	
	AREA WIDE	PURCHASE BICYCLES AND BUSES	0	90,000	0	2,490,000
VERMONT	STATEWIDE	TRANSIT PROJECT	1,415,588	0	0	
	STATEWIDE	PURCHASE VANS, SHELTER EQUIP	156,600	0	0	
	BURLINGTON	IMPROVE MAINT FAC	200,000	0	0	
	BURLINGTON	TRANSIT PROJECT	0	120,000	0	
	STATEWIDE	COMPUTER EQUIP	1,884,000	0	0	
	STATEWIDE	TRANSIT PROJECT	646,886	0	0	
	STATEWIDE	TRANSIT PROJECT	1,288,016	0	0	
	STATEWIDE	TRANSIT RELATED PROJECT	440,000	0	0	
	STATEWIDE	TRANSIT RELATED PROJECT	613,620	0	0	
	STATEWIDE	PROPERTY APPRAISALS/CONSI SERVICES	33,400	0	0	
	STATEWIDE	TRANSIT PROJECT	471,000	0	0	
	STATEWIDE	1192	86,722	0	0	
	STATEWIDE	PURCHASE 2 COMP. NATURAL GAS BUSES	0	120,000	0	
	STATEWIDE	TRANSIT PROJECT	0	32,000	0	
	STATEWIDE	TRANSIT PROJECT	0	328,000	0	
	STATEWIDE	TRANSIT PROJECT	0	8,000	0	
	STATEWIDE	TRANSIT PROJECT	0	30,000	0	7,073,832
VIRGINIA	RAPPAHANOCK	PURCHASE LOC FEEDER VEH, RAIL CARS	4,800,000	0	0	
	WASH METRO AREA	REPLACEMENT BUSES	1,120,000	0	0	
	NEWPORT NEWS	BUSES, PASSENGER FERRY RETROFIT	2,984,280	0	0	

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	BLACKSBURG	TWELVE BUSES & 18 VANS	2,768,437	0	0	
	PETERSBURG	TWO VANS	48,000	0	0	
	CHARLOTTESVILLE	THIRTEEN BUSES	2,526,587	0	0	
	DANVILLE	ONE BUS	192,820	0	0	
	LYNCHBURG	TRANSFER CENTER CONT	240,000	0	0	
	RICHMOND	BYUS PURCHASE	720,000	0	0	
	ROANOKE	EIGHTEEN BUSES	3,288,000	0	0	
	NEWPORT NEWS	TWENTY-FOUR BUSES	3,840,000	0	0	
	NEWPORT NEWS	FOUR REPLACEMENT BUSES	0	704,000	0	
	HAMPTON	BUILD TRANSPORTATION CENTER	0	1,000,000	0	
	NEWPORT NEWS	BUILD TRANSPORTATION CENTER	0	1,000,000	0	
	RICHMOND	FEASIBILITY AND DESIGN STUDY	0	200,000	0	
	RICHMOND	IMPLEMENT COMPREHENSIVE TRANSIT PLAN	0	800,000	0	
	RICHMOND	ACQ ALT FUEL BUSES FOR GRTC BUSES	0	367,000	0	
	RICHMOND	CIP STRATEGIES AND RIDESHARE	0	1,011,000	0	
	WASHINGTON, D.C.	30 REPLACEMENT BUSES	0	4,600,000	0	
	WASHINGTON D.C.	REPLACEMENT BUSES	0	4,581,000	0	
	WASHINGTON, D.C.	FIVE COMMUTER BUSES	0	920,000	0	
	TIDEWATER	EIGHT BUSES AND NEW PARK & RIDE	0	1,582,000	0	
	N/A	PURCHASE BUSES & YORK OPERATIONS	0	416,000	0	
	NORFOLK-PORTSMOUTH	20 TRANSIT COACHES FOR NOV EXP BUS	0	3,440,000	0	
	PRINCE WILLIAM	WOODBRIDGE COMMUTER RAIL ST EXPANSION	0	4,508,000	0	47,657,124
WASHINGTON	STATEWIDE	PE	0	600,000	0	
	TACOMA	PE	0	1,178,425	0	
	KING & SNOHOMISH	PURCHASE BUSES & BICYCLE TRAN. TRAIL	0	10,097,078	0	
	CLARK	BUS ROLLING STOCK LIFTS PARTICULATE	0	1,027,700	0	
	CLARK	BUS SUPPORT EQUIPMENT FACILITY	27,200	0	0	
	TACOMA	PE	333,623	0	0	
	SEATTLE	METRO	100,000	0	0	
	AREA WIDE	PURCHASE TRANSIT VEHICLES	264,732	0	0	
	MASON COUNTY	PURCHASE TRANSIT VEHICLES	53,218	0	0	
	SNOHOMISH	SELECT INSTALL AERIAL SIGNALS	0	200,000	0	
	SEATTLE	PROJECT LEVEL PLANNING SERVIC.	400,000	0	0	
	SEATTLE	PURCHASE VANPOOL VEHICLES	32,015	0	0	
	OLYMPIA	PURCHASE VANPOOL VEHICLES	55,135	0	0	
	OLYMPIA	LAND ACQUISITION	0	1,904,818	0	
	TACOMA	PURCHASE 3 WHEEL CHAIR VANS	100,000	0	0	17,173,944
WEST VIRGINIA	HUNTINGTON	PURCHASE AND RENOVATE BUS TERMINAL	0	291,246	0	291,246
WISCONSIN	MILWAUKEE	PURCHASE TRANSIT BUSES	717,900	0	0	
	MANITOWOC	PURCHASE BUS	0	200,000	0	
	MILWAUKEE	BUS UPGRADES	0	2,118,400	0	
	KENOSHA	TRANSIT MARKETING PROGRAM	0	20,000	0	
	KENOSHA	COMMUTER RAIL	0	120,000	0	
	KENOSHA	REMODEL RAIL STA.	0	325,000	0	
	MILWAUKEE	PURCHASE BUSES	0	0	883,000 2/	4,383,400
VIRGIN ISLANDS	ST.CROIX,ST.JOHN	TRANSFER OF FUNDS	5,100,000	0	0	
	ST.CROIX,ST.JOHN	TRANSFER OF FUNDS	1,004,197	0	0	6,104,197
TOTAL OBLIGATED			254,431,674	638,610,525	144,749,537	1,037,791,736

1/ Interstate Highway Substitution Funds
2/ Minimum Allocation Urbanized Funds
3/ Priority Intermodal Projects
4/ Innovative Projects
5/ Congestion Relief Demo Project
6/ Highway Demo Projects

TESTIMONY OF THE

AMERICAN PUBLIC TRANSIT ASSOCIATION

BEFORE THE

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

OF THE

HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

April 21, 1994

PRESENTED BY

Richard Voith
Member of the Board of Directors
Southeastern Pennsylvania
Transportation Authority
Philadelphia, PA

*****

American Public Transit Association
1201 New York Avenue, N.W.
Washington, DC 20005
(202) 898-4000

APTA

APTA represents over 1100 members, including all major commuter rail operations, motor bus and rapid transit systems, and organizations responsible for planning, designing, constructing, financing and operating transit systems, APTA members include business organizations which supply products and services to the transit industry, academic institutions, and public interest groups.

Mr. Chairman and Subcommittee members, my name is Richard Voith. I am a Member of the Board of the Southeastern Pennsylvania Transportation Authority (SEPTA). It is a pleasure to be here on behalf of the American Public Transit Association (APTA), which represents the transit systems that provide about 97% of our nation's transit services, as well many of the manufacturers and suppliers who provide goods and services to our industry. Thank you for giving APTA this chance to testify on public transit infrastructure needs as we approach the mid-point of the Intermodal Surface Transportation Efficiency Act (ISTEA) authorization period.

Transit Needs

This testimony includes a copy of *Public Transportation Funding Needs, 1995-1999: Summary of an APTA Membership Survey*. The Survey is the most up-to-date and comprehensive assessment of public transit funding needs that is available.

APTA's Transit Funding Needs Survey found that the U.S. transit industry will need $38 billion annually in total funding from 1995 through 1999. The average annual need for operating revenues is $22.7 billion, $5.7 billion more than currently available. The annual capital investment need is $15.3 billion, $9.7 billion more than currently available.

The value of capital investments in transit can only be realized if there is sufficient funding for operating needs. We cannot provide fixed-route or paratransit service without paying for fuel and labor costs. We cannot maintain the existing federal investment in facilities and vehicles without the resources to repair and rehabilitate aging buses and rail systems. With full funding of our operating needs, we can expect a greater return on federal capital investments because the infrastructure can be used more intensively.

These funds are needed to maintain current service and complete service expansions that are under way or already planned. The total need figure includes transit systems that provide rail, bus, or ferry service in the nation's largest metropolitan areas, and single mode transit operations in smaller metropolitan areas and rural counties. The attached Summary provides a more detailed explanation of the need for new and rehabilitated buses and rail cars, modernization of facilities, and other costs.

The $38 billion annual figure is needed to provide reliable, efficient service that meets the needs of current riders, attracts new customers, and complies with federal mandates for accessible, environmentally beneficial transit service. This funding level is necessary to fulfill ISTEA's goal that:

> "The National Intermodal Transportation System shall include significant improvements in public transportation necessary to achieve national goals for improved air quality, energy conservation, international competitiveness, and mobility for elderly persons, persons with disabilities, and economically disadvantaged persons in urban and rural areas of the country."

As this quotation from ISTEA reminds us, we should not think of transit infrastructure simply in terms of route miles or numbers of buses or facilities. Transit operators use the capital and operating funds to serve customers, many of whom depend on transit, and others who choose to ride rail systems and buses. To satisfy existing customers, and to win over new ones, a greater investment in transit would produce a more marketable product.

Increased transit ridership is part of the solution to national transportation problems that result in traffic congestion, air pollution, and inadequate service for those who depend on transit. To realize their full potential, transit systems need to be connected with other transportation elements as part of an integrated national network. That is why APTA, in partnership with AMTRAK, the Community Transportation Association of America (CTAA), the High-Speed Rail/Maglev Association, and others, developed America's New Surface Transportation Network. This network includes all of the nation's high-capacity surface transportation services -- railways, metropolitan and rural transit systems, and intercity bus routes -- as well as the intermodal facilities that connect them. The APTA Funding Needs Survey documents the resources that transit agencies need to meet their responsibilities as full partners in the national, intermodal transportation system.

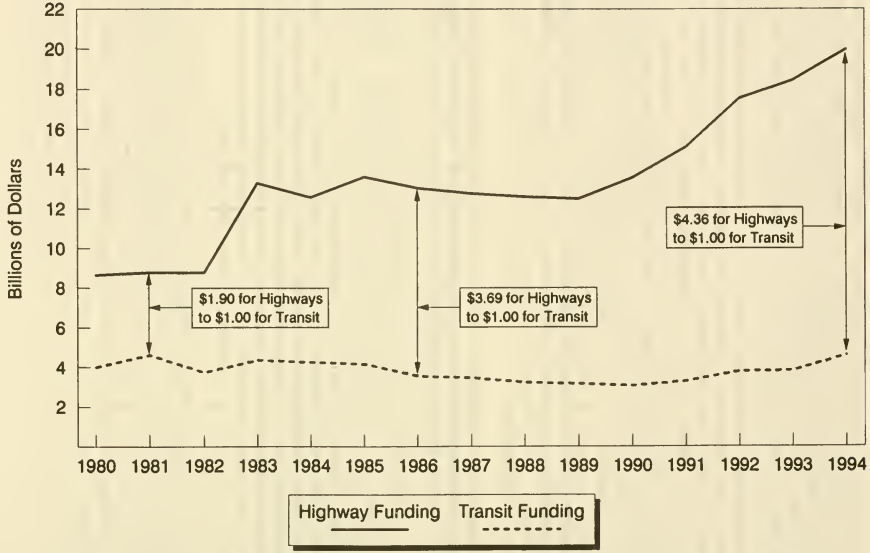
Transit Funding History

From 1981 to 1992, federal transit funding declined by 53%, adjusted for inflation. In 1981, highways received $1.90 in federal funds for every federal transit dollar. Today, highways receive $4.36 in federal funds for every federal transit dollar. [See Chart 1.]

Federal operating assistance also declined, by 65% in constant dollars between 1980 and 1992. [See Figure 3 on page 5 of *Public Transportation Funding Needs*.] This reduction of federal funding led to service cuts, fare increases, and a greater reliance on state and local assistance. Between 1980 and 1992, fares increased by 43% in constant dollars and state and local operating aid increased by 69% in real terms. The rise in fares and reductions in service limited ridership during the 1980s. Each 10% increase in fares results in a loss of 4% of transit riders. At the same time, the cost of driving declined in real terms. As Chart 2 illustrates, fare increases and the decline in the real price of gasoline occurred at the same time. These factors contributed to the 41% rise in vehicle miles traveled (VMT) and the resulting steady increase in congestion between 1983 and 1990.

For public transit, the passage of ISTEA in November 1991 marked an end to a decade of neglect at the federal level. The Public Works and Transportation Committee, recognizing that transit ridership had to increase if existing congestion and mobility problems were to be solved, and future pollution, energy, and other crises were to be averted, authorized major funding increases and procedural changes designed to move more people, not more vehicles.

Chart 1: Divergence of Annual Federal Funding for Highways and Transit, 1980-1994



The National Transportation System

One of ISTEA's greatest conceptual changes is to stop thinking of the nation's surface transportation facilities as isolated, independent systems. ISTEA calls for a new perspective in which all of these facilities are viewed as interconnected:

> "It is the policy of the United States to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy, and will move people and goods in an energy efficient manner."

In response to this challenge, APTA joined other organizations to create America's New Surface Transportation Network, copies of which are included with my testimony. This map depicts the nation's high-capacity shared-ride surface transportation services: public transit systems, intermodal terminals, AMTRAK lines, and high speed rail and maglev corridors. Investments in this intermodal network can relieve congestion, reduce air pollution, save energy, improve productivity, and meet the mobility needs of all Americans. At its heart are the intermodal connections that enable people to travel from place to place using a range of transportation choices without depending on the automobile.

On December 9, 1993, Secretary of Transportation Federico Peña announced the submission to Congress of a proposed National Highway System (NHS) and also the Administration's intent to develop a National Transportation System (NTS). Secretary Peña's NTS vision is the right direction for our transportation system.

When it drafts the NHS legislation, Congress should include a provision requiring the development of a national surface transportation network. We believe that this network should include principal elements of America's New Surface Transportation Network. It should also support attainment of full accessibility required by the Americans with Disabilities Act and environmental improvement required by the Clean Air Act.

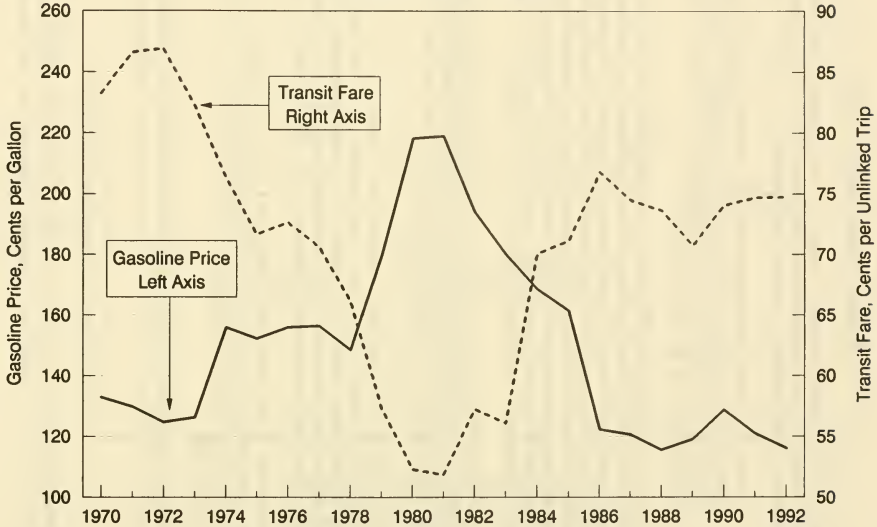
ISTEA recognizes that transit is a vital component of the new intermodal network. The highway program used to be justified in terms of interstate commerce -- now we understand that interstate commerce will bog down unless transit is available to take cars off the most crowded freeways.

The transit industry believes that the completion of this network, truly national in scope, is as important a national priority as the ongoing expansion of our highway system.

Consequences of Inadequate Investments

Everyone benefits from increased transit ridership. People who use transit gain when fares are stable and service is maintained or expanded. Those who don't ride transit are better

Chart 2: Real Gasoline Price per Gallon Compared to Average Transit Fare per Unlinked Trip
(Constant 1993 Dollars)



off because they share the road with fewer vehicles. Everyone benefits when the air is cleaner and the economy is more productive.

Congress enacted ISTEA, the Americans with Disabilities Act (ADA), and the Clean Air Act Amendments of 1990 to address needs associated with mobility, clean air, efficient movement of people and goods, and energy conservation. Our failure to invest adequately in transit infrastructure and operating requirements will inhibit our ability as a nation to meet these needs.

A major advantage of transit investments is that they are synergistic; that is, the same investment achieves many goals. For example, modernization of a bus route's facilities and buses can increase comfort and reliability, provide accessible transportation to people who use wheelchairs, and reduce maintenance costs, bus emissions, and downtime. As a consequence, the same investment can satisfy existing customers, attract new riders, and thereby increase revenue from the farebox and contribute to the reduction of congestion and air pollution problems.

The APTA survey found that, during 1995-1999, transit systems will require $1.88 billion per year to acquire 6660 buses and 760 vans. Full funding of this need will enable transit systems of all sizes to buy new lift-equipped buses that comply with federal alternative fuel mandates and to purchase new vans to provide ADA-mandated paratransit services. The U.S. bus manufacturing industry, with plants and suppliers in many communities throughout the country, will be able to operate at higher capacity and create thousands of jobs instead of struggling at 25% of capacity.

If funding for new buses and vans falls short of these needs, the transit industry will find it harder to provide convenient, cost-effective bus service. Today, about one in five buses exceeds the 12-year age at which the Federal Transit Administration (FTA) recommends replacement. Some 40% of small buses and vans exceed the age for recommended replacement. Older buses are more likely to have higher maintenance costs and longer down time, and to lack wheelchair lifts or alternative fuel capability. Potential customers are less likely to consider riding them.

As a result, any shortfall in funding for bus and van needs will have a wide range of consequences, all of them negative. The shortfall will jeopardize efforts to comply with ADA, to attract new customers, and to improve the quality, comfort and reliability that keeps existing customers on board. Higher maintenance costs and more down time will put more stress on the transit system budget. There will be a tendency to perpetuate the cycle of poor service, lower ridership, fare increases, and still lower ridership. Similar problems will result from the failure to invest in other transit needs, including fixed guideway new starts and rehabilitation.

Just as transit investments provide benefits, the failure to invest in transit will have adverse consequences. I would like to cite two in particular.

* **Metropolitan Area Vitality** -- Transit investments help our nation's urbanized areas in three ways: 1) they maintain the vitality of the urban core districts that are at the heart of our metropolitan areas and promote economic development associated with transportation facilities; 2) they allow expanded service to link urban workers with suburban jobs; and 3) they fill in gaps in suburb-to-suburb transit service.

A study of the Philadelphia area, for example, found that the central city, suburbs, and state all gain from transit investments. The 1991 study, prepared for the Delaware Valley Regional Planning Commission by Cambridge Systematics, Inc. and the Urban Institute, found that full investment in SEPTA would return $9 to the economy for every $1 invested. In contrast, it found that failure to increase capital funding would siphon billions of dollars each year from the regional and state economies. Just as important, the study found that the elimination or reduction of SEPTA services due to inadequate investment would increase the cost of doing business in the region, reduce business access to labor markets, increase living costs, lower the quality of life, and hurt the tourist industry.

The Study compared four alternatives: 1) rehabilitation of SEPTA and continuation of its current services, which would require a $4.5 billion investment over 10 years; 2) a 50% cut in services and rehabilitation of the remaining services, which would require about half the investment of the first option; 3) a gradual shutdown of all services over 10 years; and 4) immediate shutdown of all services. Options three and four would require no capital investments.

By the year 2020, each scenario would have drastic consequences. Compared to the full rehabilitation option, the 50 percent service cut would lead to 26,000 fewer jobs and $2 billion less in business sales (in 1990 dollars) in the metropolitan area. The gradual shutdown option would mean 144,000 fewer jobs and $13 billion less in business sales. Immediate shutdown would cost 170,000 jobs and $15 billion in business sales. Areas of Pennsylvania outside the metropolitan area would also suffer adverse economic impacts.

* **Air Pollution** -- All forms of transit have the potential to reduce pollutant emissions compared to single-occupant vehicle driving. One person using transit for a year instead of driving alone saves 9.1 pounds of hydrocarbons, 62.5 pounds of carbon monoxide, and 4.9 pounds of nitrogen oxides.

Nonetheless, questions have been raised about the air quality benefits of new transit rail systems and other Transportation Control Measures (TCMs) listed in Section 108(f) of the Clean Air Act. *Clean Air Through Transportation: Challenges in Meeting National Air Quality Standards* (an August 1993 joint report by the U.S. Department of Transportation and Environmental Protection Agency) discusses these concerns. The joint report makes it clear that existing transit rail systems reduce air pollution:

> "In Northeastern cities with long-established rail transit systems, there is little doubt these urbanized areas would suffer much worse congestion and air pollution if these

> rail systems ceased operating. In the greater New York metropolitan area, for example, there is virtually no alternative to a viable rail system."

Boston, Chicago, Philadelphia, San Francisco, and Washington, D.C. are other cities in which existing rail systems make a vital contribution to air quality as well as congestion reduction. These metropolitan areas will find it easier to comply with clean air requirements if their existing transit systems are able to limit fare increases, improve service, and modernize facilities and vehicles. When these systems are forced to raise fares or reduce services, they lose riders. Some trips are not made, but others are made instead by drivers of single-occupant vehicles (SOVs). That contributes to air quality problems.

Clean Air Through Transportation suggests that clean air strategies should incorporate higher prices for automobile use, including parking and rush-hour driving surcharges:

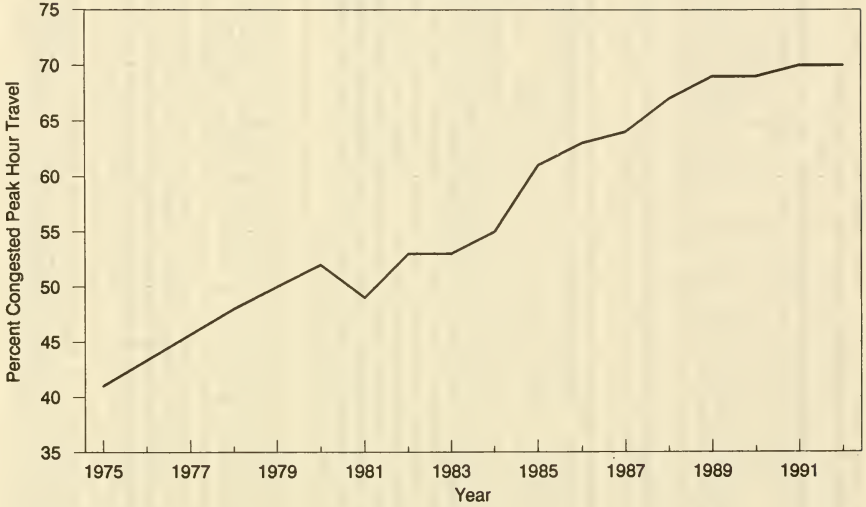
> "Substantial changes in the level of TCM effectiveness will require all levels of government to look beyond traditional TCMs to economic/market-based TCMS, such as congestion pricing, increases in parking prices, emissions charges, etc., which show greater emission reduction potential."

The authors of ISTEA realized that transportation decisions had to be linked with land use-planning in order to achieve goals for air quality, congestion reduction, conservation, and improved mobility. It now appears that metropolitan regions need to develop more comprehensive packages of TCMs to fulfill ISTEA's expectations. Places like Portland, Oregon and Sacramento are encouraging transit-oriented development to give people more opportunities to reduce private vehicle use. We are very pleased that the Federal Transit Administrator has proposed a Livable Communities Initiative to encourage transit- and pedestrian-oriented development. Especially when coupled with market-based measures to increase the price of driving and parking, this form of development has the potential to limit the growth in VMT and increase transit ridership.

Regardless of the environmental benefits, transit investment is essential to the livability of our cities and urban areas. The result of inaction will be growing constraints on everyone's mobility and quality of life, as congestion overwhelms our highway infrastructure. Chart 3 illustrates the rise in congestion on urban interstate highways since 1975. In 1989, transportation delays wasted $5.5 billion in excess fuel and cost more than $33.5 billion in lost time in just 50 large and medium-sized U.S. urbanized areas. By 2005, delays on urban freeways are projected to increase five-fold. Transit is a vital part of the answer to congestion: It would take a line of 58 automobiles stretching six city blocks to carry as many people as a single full bus, and 900 autos stretching 95 blocks to replace a full, six-car heavy rail train.

The recent earthquake in Los Angeles accentuated how close we are to maximum capacity on our highways and the important alternative that transit provides to those highways. Many urban areas have little capacity to build additional roads or are prohibited from building

Chart 3: Urban Interstate Congestion
Percent of Peak Hour Travel



Source: FHWA.
Congestion defined as vehicle/service flow ratio of 0.80 or greater.

more roads under the Clean Air Act. In any case, transit should always be considered as a cost-effective alternative to increased highway capacity.

Failure to invest in transit infrastructure will cause other problems:

* **Decreased Mobility for Transit-Dependent People** -- People who depend on transit include disproportionate numbers of low-income people and those most vulnerable in our society. On a nationwide basis, 27.5% of transit riders have incomes below $15,000. Twelve million families have no motor vehicle while another 31 million have just one vehicle. For many people in these households, transit is the only transportation option.

* **Lagging Productivity** -- Productivity growth in the U.S. has declined from an average of 1.8% per year in the 1960s to 0.7% per year in the 1980s. Investments in transit can improve productivity by allowing for more efficient movement of people and goods. Investing $100 billion in transit over 10 years would improve worker output by $521 billion, reflecting impressive gains in efficiency, time savings, and reduced costs. This is more than double the $237 billion in increased output that would result from a comparable investment in highways.

* **Jobs Foregone** -- Each $100 million investment in transit supports 5,800 jobs. In addition to the 282,000 transit agency employees, thousands of other people work at jobs supported by transit. In addition to supporting the U.S. bus manufacturing industry, transit agencies can provide a market for a revitalized U.S. passenger rail car manufacturing industry -- if the transit industry can meet its $4.2 billion per year capital requirement for new and rehabilitated buses, vans, and rail cars.

* **Rural Isolation** -- For many rural residents, transit is a crucial link with work, health care, and other vital services. In some 3,091 non-metropolitan counties, transit services provide 94 million trips per year. Elderly people, people with disabilities, and people with low incomes make up a high percentage of rural transit riders, and 62% are women. We are pleased that the President's FY 1995 funding request for the Section 18 Rural Transit Program reaches the authorized level, but it is still a challenge to extend operations to the 1,200 rural counties with no transit service.

* **Energy Addiction** -- Transportation uses 63% of our oil and is the only sector of the economy where oil consumption is still rising. In recent years, oil imports have accounted for as much as 70% of our trade deficit. Transit offers an alternative to single-occupant vehicle driving, which uses more energy per capita than any other form of transportation. One person taking transit to work for a year instead of driving alone saves 200 gallons of gasoline, and a 10% increase in transit use nationwide would save 135 million gallons of gasoline each year.

* **Fewer Lifelines in Emergencies** -- Transit proved its usefulness in the aftermath of the recent Los Angeles earthquake as well as the Mississippi Valley floods. To ensure that

public transit can provide assistance in times of emergency, reliable funding and support are necessary.

Federal, State, and Local Support of Transit Infrastructure

In addition to authorizing more federal transit funding, ISTEA redefined the federal-state-local relationship in transportation planning. APTA believes that the change is a positive one, though it has taken time for all parties to implement the new relationships. Your Subcommittee did a great service last year in holding hearings on ISTEA implementation.

In its testimony to the Subcommittee last October, APTA recommended the passage of legislation to increase the federal fuels excise tax to provide a predictable, reliable source of funding for investment in transit and other surface transportation infrastructure needs. An increase in the federal gasoline tax would also provide the additional benefit of raising the price of SOV travel, as recommended by a number of transportation analysts. It would encourage energy conservation, better reflect the true cost of highway use, and make high-occupancy public transportation services more competitive with automobile use.

We also urged the Subcommittee to support legislation to increase spending from the Highway Trust Fund and its Mass Transit Account. We would be happy to work with you on proposals to increase our ability to spend down the balances in the Mass Transit Account.

Since the October hearing, APTA has approved policies on national transportation needs and the legislation to approve the National Highway System (NHS). When Congress considers the NHS bill, it should include a provision to require the development of a national, intermodal surface transportation system within a certain time frame. The NHS bill also provides an opportunity to strengthen ISTEA's metropolitan planning provisions. In October, APTA discussed the importance of transit participation in Metropolitan Planning Organizations (MPOs); we want to apprise you of our specific legislative recommendations on this issue.

Full Funding of ISTEA and the Administration Budget Proposal

Full funding of ISTEA is an important first step. This would still leave the federal share of transit funding at 13.5% of the total need in FY 95-96, and 19.1% of the total need in FY 97 (the last year of ISTEA, when funding spikes sharply upward).

The Administration's proposed FY 1995 budget is a disappointment because it would cut transit operating assistance by $202 million and Section 3 New Start funding by $268 million from the FY 1994 level. We oppose both of these reductions. In a survey answered by 120 APTA members, seven out of ten transit systems stated that they would be forced to raise passenger fares to make up for a proposed $202 million cut in federal operating assistance. The responding systems would increase fares by an average of 23 percent. APTA urges that

operating assistance be maintained at least at its current level -- if not raised to the level authorized in ISTEA.

We also support funding of the full authorized Section 3 fixed guideway New Start program, which is an essential part of the overall ISTEA transit program and a vital source of resources for major capital investments.

Besides fully funding ISTEA, Congress can support transit infrastructure in several ways. While some fall outside the Public Works Committee's jurisdiction, this Subcommittee can play a constructive role in alerting Congress to the need to consider all the benefits of transit investments, projects, increased federal fuels excise taxes, full funding of federal mandates, and increased authority to spend from the Mass Transit Account of the Highway Trust Fund.

Strengthen MPOs

For the nation's metropolitan areas, ISTEA designated the Metropolitan Planning Organization as the primary body for transportation policy making. The ISTEA framework is fundamentally sound, but it can be improved through legislation that requires MPOs to enhance the role of transit agencies and local governments. Transit systems should have stronger roles in MPOs, including full voting membership and voting representation on the MPO executive committee or governing board.

This is a timely issue because the role of the National Highway System in metropolitan areas must be brought into harmony with the MPO and its responsibilities. At present, planning regulations do not adequately guarantee that metropolitan area NHS routes will be fully integrated into the metropolitan planning process. This would undercut a major goal of ISTEA's authors. How can an MPO comply with clean air mandates if decisions on major roads are out of its control? The NHS should be incorporated in the metropolitan planning process, not imposed on it.

Proposed NHS routes in Transportation Management Areas (TMAs) should be recommendations that conform with congestion management and clean air attainment plans. The MPOs should determine the most appropriate way to improve mobility on the NHS routes in their areas, including investments in high-capacity rail services that need not be directly adjacent to highway routes. Otherwise, MPOs will have a much harder job of meeting clean air targets and linking the transportation planning process to land use planning goals. For some congested highways, the key may be a transit rail route, a busway, a freightway or some other investment.

Metropolitan areas should receive an equitable share of NHS funds. These are the areas where congestion presents the most serious threat to the efficient operation of the NHS, so it is important for them to receive a fair share of the federal resources designated for creation of an efficient NHS. This is why some have suggested a suballocation of NHS

funds based on population, VMT, or congested miles of NHS routes. Congress should work with APTA and other interested groups to develop a definition of NHS funding equity.

Measuring Transit Benefits

When ISTEA was passed, Congress recognized that the funding was insufficient to meet all needs, so priorities would have to be set -- an all the more critical need since transit funding has been well below authorized levels. Transit is cheaper than new highways in areas where congestion and air pollution are most serious -- the urbanized areas where land acquisition costs and community opposition make new freeways impractical.

APTA applauds the Public Works Committee's efforts to make sure that resources are invested soundly. We urge the Committee to ensure that measures of project cost-effectiveness include costs of vehicle emissions, congestion, a project's contribution to providing accessible transportation to people with disabilities, and other factors that have not been adequately measured in the past. More accurate and complete measures of these costs will show that public transportation projects are more efficient and effective investments as part of a balanced transportation system.

The General Accounting Office (GAO), in March 1 testimony to the Surface Transportation Subcommittee [*National Highway System: Refinements Would Strengthen the System*, GAO/T-RCED-94-136], suggests that performance measures for the NHS need to be formulated so that we can measure progress toward the goals that Congress established for the NHS. Growing congestion on metropolitan area NHS routes will jeopardize the efficient movement of people and goods that is a leading rationale for the NHS. This threat to the NHS makes it all the more important to consider seriously measures that limit the incentives for SOV travel.

As part of this process, transit ridership calculations should be revised to reflect other policy changes such as increased charges for parking and rush-hour travel. In all too many cases, analysts have called for higher prices of SOV travel as an alternative to transit investments without recognizing that higher SOV prices will increase transit ridership.

Fully Fund All Federal Mandates

Another reason for increased federal transit funding is the need to assist transit agencies in complying with the costs of federal mandates, especially those established by the Americans with Disabilities Act (ADA) and the Clean Air Act Amendments of 1990. The transit industry supports these laws and the goals they are intended to accomplish. We will carry out our responsibilities to provide accessible transportation and to reduce air pollution, but full funding of ISTEA is necessary to implement the mandates established by these laws.

Last year, the General Accounting Office testified to the Senate Transportation Appropriations Subcommittee [*Mass Transit: FTA's Projections Could Better Reflect State and Local Needs*, March 11, 1993], that APTA's $90.8 billion figure for six-year capital

requirements, identified from the 1991 capital needs survey, could be understated because it does not fully account for:

> "(1) costs for transit vehicles to convert to alternative fuels, due to clean air or energy conservation requirements; (2) ADA requirements to make existing transit stations accessible to persons with disabilities and to provide expanded special services for the disabled; and (3) expanded transit services to meet specific transportation-related goals, such as reduced traffic congestion or improved air quality."

The estimated national, annual cost to comply with ADA transit capital and operating requirements is $950 million (1993 dollars). Costs include bus lifts, developing and operating paratransit systems, and making key rail stations, transit centers and rail cars accessible. Paratransit operating costs alone are estimated to be $693 million. Costs of alternative fuels required by the Clean Air Act are estimated at $57 million per year. Drug and alcohol tests will cost an estimated $44 million, not including the expense of substitute help when employees are tested. [See Figure 4 on page 6 of *Public Transportation Funding Needs*.]

The ADA seeks to give people with disabilities access to transit systems that everyone else uses. The Clean Air Act seeks to reduce pollution through increased use of transit. We hope that Congress and the Administration recognize the importance of helping our industry with the costs that result from these federal mandates. If these costs are imposed on transit riders in the form of higher fares or less service, the resulting loss of ridership will undercut transit's financial stability and its contribution to accessibility and clean air goals.

We believe that everyone should have access to modern, efficient transit systems that reduce air pollution and congestion by attracting new riders and getting them out of their automobiles. Without adequate federal support, the reality is that transit-dependent people -- including many low-income workers, senior citizens, and people with disabilities -- will be consigned to shabby, inefficient transit systems. People who have a choice will use their own vehicles regardless of the consequences for pollution, congestion, and wasted energy.

Conclusion

Mr. Chairman and Subcommittee members, the transit industry wants to help create a transportation system that sustains economic growth, meets the mobility needs of all Americans, and achieves the goals set by Congress in ISTEA, the Clean Air Act, the ADA, and other laws. With adequate funding for capital and operating costs, public transit can serve people who have no other transportation option and attract new customers from other modes. If the needs identified in our 1994 survey are not met, our nation will face a loss of mobility, growing limits on transportation choices, and threats to our quality of life.

The views expressed here are solely those of the authors and do not necessarily represent the views of the Federal Reserve Bank of Philadelphia or of the Federal Reserve System.

PUBLIC TRANSPORTATION FUNDING NEEDS, 1995-1999

Summary of an APTA Membership Survey

APTA

American Public Transit Association
1201 New York Avenue, N. W.
Suite 400
Washington, DC 20005
(202) 898-4000

March 8, 1994

PUBLIC TRANSPORTATION FUNDING NEEDS, 1995-1999
Summary of an APTA Membership Survey

PRINCIPAL FINDINGS

- U.S. transit agencies will need $38 billion annually in total funding from 1995 through 1999.
- The average annual estimated need for operating revenue is $22.7 billion.
- Annual operating revenue needs exceed current annual operating revenue by $5.7 billion.
- A total of $15.3 billion will be needed annually for capital investment.
- Annual capital investment needs exceed current annual capital revenue by $9.7 billion.

OVERALL NEEDS

Public Transportation Agencies Need $38 Billion Annually Over Next Five Years

U.S. transit agencies will need $38 billion annually in total funding from 1995 through 1999, according to a survey of transit agency members of the American Public Transit Association (APTA). The funds are needed to maintain current service and complete service expansion already under way or planned.

The amount includes an annual average of $22.7 billion for operations and $15.3 billion for capital investments. Funds are from all sources: fares, other earnings, local assistance, state assistance, and federal assistance. The amounts are in current dollars and are not adjusted for inflation.

The $38 billion annual need is $15 billion greater than total transit revenue in 1993. Transit funding needs will increase because the demand for transportation in local communities is growing and the quality of transportation provided must be improved. Federal mandates for service provision under the Americans with Disabilities Act will make transit service available to new riders; mandates under the Clean Air Act will enhance transit's contribution to emissions reduction contrasted with other transportation

TABLE 1: ESTIMATED ANNUAL TRANSIT FUNDING NEED
ALL REVENUE SOURCES, 1995-1999
(Billions of Dollars)

Category	Average Annual Need (Billions of Dollars)
Operating Funds	$ 22.7
Capital Funds	$ 15.3
Total Funds	**$ 38.0**

modes; and drug and alcohol testing mandates under the Omnibus Transportation Employee Testing Act will improve transit's enviable safety record.

Increased funding for transit is needed to provide a viable transportation alternative to clogged roads. Transit improves mobility, reduces air pollution, saves energy, improves economic productivity, reduces disruptive traffic in neighborhoods, allows more efficient land use, and increases the mobility of women, children, elderly persons, people with disabilities, economically disadvantaged persons, and anyone who is unable to or chooses not to drive.

OPERATING NEED

Annual Operating Needs Average $22.7 Billion

The average annual estimated need for operating revenue will increase to $22.7 billion. The largest portion of operating needs, $9.9 billion, will be for vehicle operations. Vehicle operations includes operation of passenger vehicles, fuel, scheduling, system security, passenger vehicle movement control, and ticketing and fare collection. Operating needs are presented in four categories on Table 2 and Figure 1.

Maintenance needs will be $6.6 billion annually. These include vehicle repairs, regular servicing for fuel and cleaning, regular vehicle inspections, and repairs for damage resulting from vandalism and other events. Maintenance needs also include non-vehicle maintenance. Non-vehicle maintenance is the repair of buildings, grounds, and equipment other than passenger vehicles, operation of electric power facilities, and maintenance of stations, structures, track, communication systems, fare collection systems, and other systems and facilities needed to operate a transit system.

General administration needs will be $4.4 billion annually. General administration includes safety, insurance, planning, purchasing, engineering, and other administrative

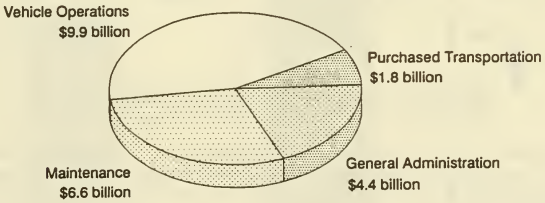
TABLE 2: ESTIMATED ANNUAL OPERATING REVENUE NEED
ALL SOURCES, 1995-1999
(Billions of Dollars)

Category	Average Annual Need (Billions of Dollars)
Vehicle Operations	$ 9.9
Maintenance	6.6
General Administration	4.4
Purchased Transportation	1.8
Total Annual Operating Revenue Need	**$ 22.7**

functions that involve all transit operations and service.

Purchased transportation needs will be $1.8 billion annually. This category includes contract costs, administrative costs, and other costs of transit service provided by another agency, frequently a private provider. Purchased transportation is often service on lower passenger demand routes or for special services such as demand responsive service. The total operating need estimate is based on survey responses and the amounts for specific operating costs are based on survey responses and historical data.

Figure 1: Estimated Annual Operating Revenue Need
All Sources, 1995-1999



Total: $22.7 Billion

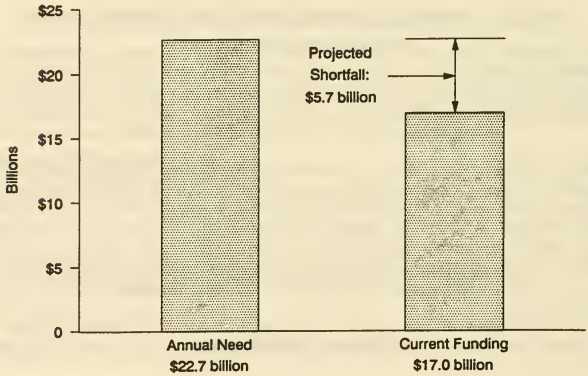
Operating Needs Exceed Current Revenue by $5.7 Billion

Total transit operating revenue in 1993 was an estimated $17 billion. Annual operating funding needs exceed current funding from all sources by 34 percent.

Increased operating revenue is needed to meet the operational costs of federal mandates, to avoid deferral of capital equipment maintenance, to provide additional service needed to meet current demands, to maintain the quality of existing transit service, and to operate the new and improved service that will be provided by expansion. The need estimate is constrained, and includes only amounts needed to maintain current service at full effectiveness and efficiency, and to operate already-planned expansion.

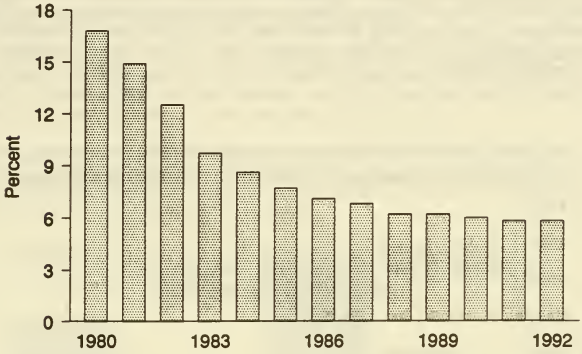
As shown in Figure 2, estimated operating revenue needs exceed current operating revenue by $5.7 billion. This potential shortfall is aggravated by the long-term decline in federal funding for transit operations. From 1980 through 1994 federal appropriations for operating assistance in urbanized areas declined from $1.1 billion to $802 million. In nominal dollars this is a 27 percent reduction adjusted for inflation, urbanized area operating assistance declined 59 percent over the period.

Figure 2: Estimated Annual Operating Revenue Need Contrasted to Current Funding



The declining portion of total operating revenue from federal assistance is shown on Figure 3. In 1980, federal operating assistance was 16.8 percent of all transit revenue for operations. By 1992, federal operating assistance had declined to 5.8 percent of all transit operating revenue, a decrease of over 65 percent.

Figure 3: Federal Share of All Transit Operating Revenue (Percent)



Clinton Administration Budget Would Reduce Operating Assistance to Less Than Cost of Recent Federal Mandates

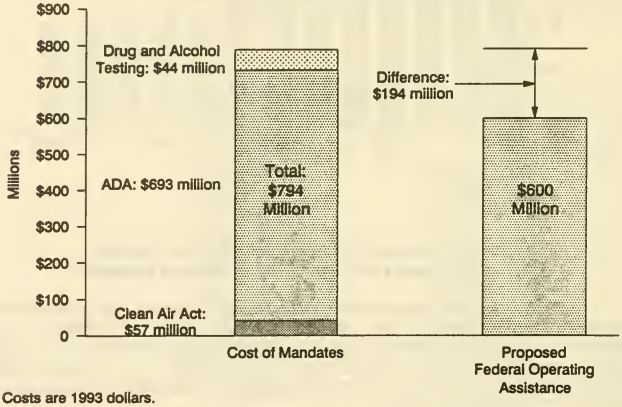
The Fiscal Year 1995 Clinton Administration budget calls for a further reduction of federal operating assistance to $600 million, a cut of $202 million or 25 percent. The additional cut in operating assistance has been requested despite the fact that operating costs are being driven up as a result of new federal mandates. If the budget request were to become law, the real value of federal operating assistance for urbanized areas would drop 70 percent from 1980 to 1995.

The Administration budget request for urbanized area operating assistance is less than the immediately identified operating costs of recent federal mandates. Figure 4 shows the annual operating costs of three federal mandates. Drug and alcohol testing, to meet requirements of the Omnibus Transportation Employee Testing Act, will cost $44 million. These are test costs only; they do not include the cost of taking personnel off jobs to be tested.

The estimated operating costs to comply with the Americans with Disabilities Act are $693 million. To meet Clean Air Act requirements, fuel costs alone would be $57 million annually.

The total identified operating costs of those three mandates are $794 million annually, $194 million more than the urbanized area operating limit in the Fiscal Year 1995 Administration budget, and only $8 million less than current federal urbanized area operating assistance. The identified operating costs of these federal mandates are considered to be minimal values, and the real costs may be substantially higher.

Figure 4: Annual Operating Costs of Major Federal Transit Mandates Contrasted to Proposed FY 1995 Federal Operating Assistance



Costs are 1993 dollars.

CAPITAL NEEDS

Annual Capital Revenue Needs Will be $15.3 Billion

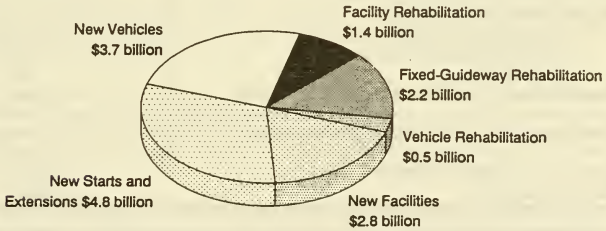
A total of $15.3 billion annually will be needed for capital investment. Figure 5 and Table 3 describe these needs by category of investment. This amount includes $11.3 billion for new equipment and facilities with $3.7 billion annually for new passenger revenue vehicles; $4.8 billion annually for fixed-guideway new starts and extensions, and $2.8 billion annually for other new facilities and capital items.

Passenger revenue vehicles include all vehicles used by transit agencies to carry passengers, including buses, vans, trolley coaches, heavy rail cars, light rail cars, commuter rail cars, ferry boats, and other types of rail cars.

Fixed-guideway new starts and extensions costs are those associated with purchase and construction of new fixed guideway rights-of-way including stations and vehicles for heavy rail, light rail and commuter rail routes, and dedicated busways or roadways exclusively for high occupancy vehicles including buses.

New facilities include bus garages and maintenance facilities, administration buildings, park-and-ride facilities, and other capital equipment such as communications systems, telephone information systems, vehicle tracking and monitoring systems, fare collection systems, and vehicle fueling systems.

Figure 5: Estimated Annual Capital Revenue Need All Sources, 1995-1999



Total: $15.3 Billion

The $15.3 billion annual capital need also includes $4.1 billion for vehicle, equipment, and facility rehabilitation. Passenger revenue vehicle rehabilitation will need $500 million annually, fixed-guideway modernization will need $2.2 billion annually, and rehabilitation of other facilities and other capital items will need $1.4 billion annually.

TABLE 3: ESTIMATED ANNUAL CAPITAL REVENUE NEED
ALL SOURCES, 1995-1999
(Billions of Dollars)

Category	Average Annual Need (Billions of Dollars)
New Passenger Vehicles for:	
Regular Replacement and Growth	$ 2.7
New Starts and Extensions	0.6
Fixed-Guideway Modernization	0.4
Total New Passenger Vehicles	**3.7**
Fixed-Guideway New Starts and Extensions:	
New Vehicle Needs (a)	(0.6)
All Other Needs	4.8
New Starts and Extensions Less Duplication	**4.8**
Total Other New Facilities and Capital	**2.8**
Passenger Vehicles Rehabilitation for:	
Regular Rehabilitation Projects	0.1
Fixed-Guideway Modernization	0.3
Total Passenger Vehicle Rehabilitation	**0.5**
Fixed-Guideway Modernization:	
New Vehicle Needs (a)	(0.4)
Vehicle Rehabilitation Needs (a)	(0.3)
All Other Needs	2.2
Fixed-Guideway Modernization Less Duplication	**2.2**
Total Facility and Other Capital Modernization	**1.4**
Total Annual Capital Investment Need (Less Duplication)	**$ 15.3**

(a): Duplicates previously listed vehicle costs. Number may not add due to rounding.

15,560 New or Rehabilitated Passenger Vehicles Will be Needed Annually

Passenger vehicles needs are shown on Table 4. Transit agencies will need to purchase new vehicles or rehabilitate vehicles currently in service. The total need for new or rehabilitated vehicles is 8,560 buses, 5,380 vans, and 1,620 rail cars of all types annually.

TABLE 4: ESTIMATED NEED FOR NEW AND REHABILITATED VEHICLES ANNUAL AVERAGE 1995-1999

Type of Vehicle	Number of Vehicles
Buses	8,560
Vans	5,380
Rail Cars	1,620
Total Passenger Vehicles	15,560

Capital Needs Exceed Current Revenue by $9.7 Billion Annually

Annual estimated capital investment needs exceed current capital revenue by 170 percent. As shown on Figure 6, the estimated annual need for capital investment is $15.3 billion while capital revenue from all sources in 1993 was only $5.6 billion, resulting in a projected shortfall of $9.7 billion annually.

This shortfall will prevent essential expansion and modernization. Without adequate capital investment funds, transit agencies will be unable to expand service to meet the demands of their communities. Without modernization and rehabilitation, facilities and equipment can not operate at peak efficiency. Constant maintenance drives up operating costs, and reduces reliability.

The federal share of capital revenue has declined since 1980, but to a lesser degree than the decline of the federal share of operating revenue. Federal appropriations for capital uses were $3.2 billion in 1981 and over $3.6 billion in 1994. Over that period federal capital funds increased 13 percent in nominal dollars but decreased 29 percent, adjusted for inflation.

In 1980, the portion of capital investment funds from the federal government for urbanized areas was 79 percent. By 1992 the federal portion had dropped to 49 percent. This decline is shown on Figure 7.

Figure 6: Estimated Annual Capital Revenue Need Contrasted to Current Funding

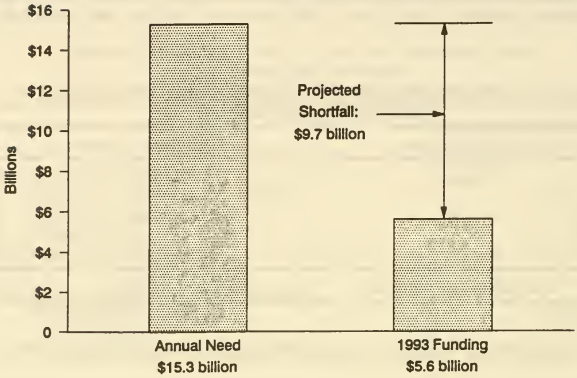
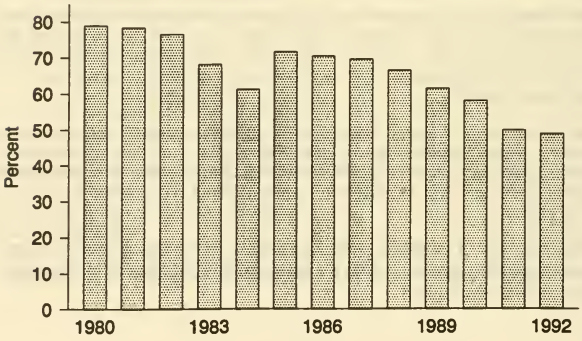


Figure 7: Federal Share of All Transit Capital Revenue (Percent)



State and local governments, including transit agency taxing districts, provided a greater portion of capital investment revenue in 1992 than the federal government. These data are for transit agencies in urbanized areas required by Section 15 of the Federal Transit Act to provide financial data to the federal government.

Development of APTA Needs Estimates

The American Public Transit Association prepares transit funding needs projections on a regular basis. These estimates affirm the continuing shortfall between funds available to transit and the funds necessary to operate transit systems at a full service level and undertake expansion to meet demands for new service.

APTA has prepared transit funding needs projections on a three-year to four-year cycle since 1975. This cycle ensures that any dramatic changes in funding needs will be reported in a timely fashion and that APTA projections will provide current, accurate data for use by policy makers within the transit industry and government.

APTA is an international association of operating transit authorities, their suppliers, and other advocates of improved transit service. APTA-member transit agencies in the United States voluntarily provided the data necessary to calculate the needs estimates in this report.

Funding needs estimated in this report are for all funds, regardless of source. They are not limited to assistance from any level of government or funds from any other source. The amounts represent money that is needed to fully and successfully carry out planned services and programs. They are not, however, predictions of spending that will actually occur. The needs reported here are in excess of historically available funding levels and are a call for an increase in those funding levels, not a prediction of actual future spending.

Funding needs estimated in this report are a summary of needs reported by individual APTA members on a voluntary basis. The responses are expanded statistically to include the needs of all U.S. transit operators. The individual responses represent the policy of the responding transit agencies within the restraints of the survey questions. The summation of individual statements, however, does not represent a national policy. The funding needs in this report are, therefore, a snapshot of the needs of the transit industry. The needs will inevitably change because the needs of local communities that contribute to this report are continually changing.

Although precise numbers developed from survey data are reported here, the data are projections of future occurrences. Thus, they indicate the magnitude of needs but do not predict future funding. The needs estimates in this report are conservative. They are based on maintaining existing operations at full effectiveness and efficiency and expanding

service only to already planned levels that can be accomplished during the time period. Greater levels of investment would be needed to accommodate significant increases in transit's share of total trips, a result that is critical if many federal transportation goals are to be achieved.

Public Transportation Funding Needs, 1995-1999 is a summary of the APTA *Transit Funding Needs Survey*. Extensive detailed information obtained from that survey will be published by APTA in the Spring of 1994.

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SUITE 2165 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4472

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MEMORANDUM

April 25, 1994

TO: Members, Subcommittee on Investigations and Oversight

FROM: Subcommittee Staff

RE: Summary of Subject Matter for Investigations and Oversight Subcommittee hearing on Aviation Infrastructure Needs, Thursday, April 28, 1994, 9:30 a.m., Room 2167 Rayburn House Office Building

The Investigations and Oversight Subcommittee has scheduled a hearing to examine our nation's aviation infrastructure needs, examine the consequences of a failure to meet those needs, and to review existing and projected funding levels. The purpose of this hearing is to establish a comprehensive, up-to-date record of needs and funding in order to provide a sound basis for making critical infrastructure investment decisions in the future.

This hearing is the third in a series of infrastructure needs hearings being held by the subcommittee this year. The initial hearing in this series, held on March 15, 1994, provided a general overview of our nation's infrastructure needs. A follow-up hearing on April 21, 1994, provided an in-depth assessment of highway, bridge, and transit infrastructure needs. Subsequent hearings will examine our nation's water resource and wastewater treatment infrastructure needs and look at innovative infrastructure financing techniques.

Witnesses at the Aviation Infrastructure Needs Hearing will include representatives from the Federal Aviation Administration, the American Association of Airport Executives; the Airports Council International-North America, the Air Transport Association of America, the Air Freight Association, the National Industrial Transportation League, and the National Business Aircraft Association.

Our aviation system is the largest, busiest, most complex, and most technologically advanced aviation system in the world. There are two major components of our aviation system's infrastructure. First, there are the more than 5,500 civil aviation airports which comprise the most visible portion of our aviation infrastructure. Second, there is the air traffic control system, comprised of more than 24,000 facilities dedicated to aircraft navigation, landing, and communications. These facilities include air traffic control towers, en route centers, radars, computers, navigation beacons, satellites, and weather detection systems.

The remainder of this memorandum will provide background information on aviation infrastructure needs, focusing on airport development and air traffic control system modernization and historical, current, and projected funding needs.

AIRPORT DEVELOPMENT NEEDS

Currently, our national airport system is not as efficient as it needs to be. A consensus has emerged that in order to prevent a significant deterioration of the ability of our airport system to move people and goods efficiently in the future, airport development funding must increase substantially. In hearings held by the Subcommittee on Aviation in February 1992 on the Financial Condition of the Airline Industry, expert witnesses testified that a principal problem in the industry was a lack of adequate airport infrastructure. In May 1993, industry witnesses testified before the same subcommittee that it would cost $10 billion per year for the next five years in order to alleviate airport congestion and reduce flight delays.

The National Plan of Integrated Airport Systems

The National Plan of Integrated Airport Systems [NPIAS] is the Federal Aviation Administration's biennial central planning document for airport development. NPIAS sets forth the type and estimated costs of airport development projects that are eligible for federal funding and are considered necessary to provide a safe, efficient, and integrated system of public-use airports to meet the needs of civil aviation, national defense, and the U.S. Postal Service. The 1991 NPIAS identified $40.5 billion worth of airport development needs through 1999. Although the 1993 NPIAS has not yet been published, an official from FAA's Office of Airport Planning and Programming advised that 1993 NPIAS would identify airport development needs of approximately $30 billion dollars over the next five years alone. All of the projects in NPIAS will not be funded, however, because there are more eligible projects than available funding.

The Impact of Failure to Meet Airport Development Needs

The 1991 NPIAS found that 23 major airports are "unacceptably congested" (individually experiencing more than 20,000 hours of flight delays annually), resulting in delays which cost our economy billions of dollars a year in lost productivity. The Federal Aviation Administration [FAA] expects that in the absence of a substantial increase in airport capacity, the number of airports experiencing unacceptable delays will grow to 40 airports by the year 2000.

Inadequate airport capacity does not just mean inconvenient delays for passengers and air cargo. It also means that the cost of providing air service goes up. According to the final report published by the 1993 National Commission to Ensure a Strong and Competitive Airline Industry, the impact of delays for the airlines alone may be as much as $5 billion per year in added fuel and aircrew costs. Inevitably, these costs are passed on to airline passengers and cargo shippers. Airport congestion also tends to restrict competition among carriers and intensify unsatisfied demand, which increases the value and price of air travel.

In recent years, a sluggish economy in the United States, economic recession in several major international trade areas, and financial problems of the airlines have contributed to a slackening of the problems associated with an inefficient and congested airport system. However, as the economy and the financial conditions of the airlines improve, industry analysts expect the slack in capacity to tighten up and the negative consequences of airport congestion and inefficiency to reappear. FAA has forecast that by Fiscal Year 2005, aviation activity will increase by 22.6 percent at airports with control towers. Scheduled domestic revenue passenger miles [RPMs] are forecast to increase 55 percent, scheduled international RPMs by 108 percent, and regional/commuter RPMs by 166 percent. General aviation hours flown are expected to increase by 12 percent during the same period.

AIRPORT DEVELOPMENT FUNDING

The Federal government has sponsored airport development since the mid-1940s. From 1946 to 1970, $1.2 billion in grants were made to airports under the Federal Aid to Airports Program. From 1971 to 1981, the Airport Development Aid Program funded $4.5 billion worth of airport improvements.

The Airport Improvement Program

Since 1982, the Airport Improvement Program has funded more than $14 billion in airport development projects. AIP is a "contract authority" program, meaning that once the program is authorized, the Federal government may enter into contracts with local airport authorities for Federal grants in return for specific assurances about how

grants will be used, how the public will be given access to facilities funded, and how airports will be operated. The Airport Improvement Program does not require a direct appropriation, but the budget and appropriations processes have established "obligation limitations" in order to prevent funding from exceeding certain levels.

The Airport and Airway Trust Fund provides the revenues used to fund AIP projects. Taxes or user fees are collected from various segments of the aviation community and placed in the Trust Fund. These taxes include an airline ticket tax, a tax on freight waybills, an international departure fee and a general aviation gasoline and jet fuel tax. AIP funding is necessarily limited because the Trust Fund also provides revenues for FAA's Operations & Maintenance Account, Facilities & Equipment Account, and Research and Development Account.

The table below illustrates historical funding of the Airport Improvement Program:

AIP FUNDING
($ in millions)

Fiscal Year	Authorization	Obligation Limitation
1982	$ 450.0	$ 450.0
1983	$ 800.0	$ 804.5
1984	$ 993.5	$ 800.0
1985	$ 987.0	$ 925.0
1986	$ 1017.0	$ 885.2
1987	$ 1017.0	$ 1025.0
1988	$ 1700.0	$ 1268.7
1989	$ 1700.0	$ 1400.0
1990	$ 1700.0	$ 1425.0
1991	$ 1800.0	$ 1800.0
1992	$ 1900.0	$ 1900.0
1993	$ 2050.0	$ 1800.0
TOTAL	$ 16,114.7	$ 14,483.4

AIP Funding for FY 94-95

In FY 94, $1.69 billion was appropriated for the Airport Improvement Program, but the program was not reauthorized. The House voted to reauthorize AIP at $2.105 billion for FY 94, $2.161 billion for FY 95, and $2.214 billion for FY 96. However, the Senate did not act to reauthorize the program. Consequently, FAA's authority to award grants expired on October 1, 1993. For the last six-and-a-half months, airports have had to either forego construction projects or, in some cases, find alternative sources of funding, such as airport bonds.

On April 19th, as an interim measure pending the resolution of an airport fee issue, the Senate passed legislation to allocate up to $800 million in AIP grants through June 30th, 1994. The bill is subject to consideration by the House. Presumably, the House and Senate will consider multi-year reauthorizations later this year.

For FY 95, the President's Budget proposed $1.690 billion for AIP, while the House Budget Resolution includes $2.165 billion. The Appropriations Committee will be setting an obligation ceiling during this session. However, it is unclear at this time what that ceiling will be.

Projects Eligible for AIP Funding

The AIP funds a variety of airport development projects, including the following:

- Construction, reconstruction, repair, or improvement of a public-use airport;
- Removal or illumination of airport hazards;
- Acquisition or installation of precision approach systems, required safety or security systems, snow removal equipment, runway surface friction measuring equipment, and firefighting and rescue equipment;
- Land acquisition for future airport development.

The AIP also makes grants for noise compatibility programs and planning. With minor exceptions, AIP funds cannot be used to construct facilities that directly generate revenue, such as parking facilities, concession areas, and leased terminal space such as ticket counters and gates.

AIP Funding Allocation

FAA allocates AIP funds to airports using three types of legislated funding arrangements: formula grants, set-asides, and discretionary grants.

Formula grants (or entitlements) are used to provide funds to primary airports (commercial service airports enplaning more than 10,000 passengers annually) and cargo airports based on activity levels, and to states for use at general aviation airports based on population and territory. The smallest primary airports receive an annual minimum of $400,000. Under the House-passed version of the AIP reauthorization bill last year, this annual minimum would have been increased to $500,000. The Clinton Administration proposal would leave the annual minimum at $400,000.

Set-asides are used to direct specified amounts of funding to legislatively-established projects, such as noise mitigation programs or airport planning, or to specific airport types, such as military airports, small airports (those receiving less than 10,000 annual enplanements), or reliever airports (general aviation airports designated by FAA to relieve congestion at commercial service airports). The Clinton Administration has proposed to reduce the set-aside for reliever airports from the current 10 percent to 5 percent of total AIP funding.

The remaining funds are discretionary, which means they can generally be used at any airport to fund capacity, safety, security, or noise projects.

The following chart illustrates how AIP funding was allocated in FY 93:

FY 93 AIP Funding Allocation
($ in millions)

Formula Grants	
Primary Airports	$573.7
Cargo Service Airports	$ 63.0
Set-Asides	
General Aviation Airports	$216.0
Noise Compatibility and Planning	$225.0
Reliever Airports	$180.0
Small Commercial Airports	$ 45.0
Airport System Planning	$ 9.0
* Military Airport Program	$ 40.5
Alaskan Airports	$ 10.5
Discretionary Funds	$400.0
TOTAL	$1,762.7

*The Military Airport Program was established in 1990 to direct funds to existing and former military airfields to enhance their usage by the civil aviation sector.

The Passenger Facility Charge Program

In 1990, an additional source of airport development funding was created when Congress authorized airports to levy passenger facility charges of up to $3 per passenger in order to finance FAA-approved projects. In approving airport development projects, FAA must determine that they meet the eligibility criteria of the AIP and that they preserve and enhance capacity, safety, or security of the national aviation system; reduce noise; or enhance competition among airlines. PFCs may also be used to construct new gates at airports to enhance competition, a type of project that is not typically eligible under the AIP program.

The first PFC collections began on June 1, 1992. To date, FAA has approved $9.2 billion in collection authority requested by airports. This is the sum of the total amounts approved for each airport to collect over the life of each airport's authorization from FAA, which in some cases stretch out for more than 30 years. The following table depicts the annual PFC collections by U.S. airports:

Passenger Facility Charge Collections
($ in millions)

FY 1993	$486.0
FY 1994	$752.0 (est.)
FY 1995	$750.0 (est.)

Source: Federal Aviation Administration

Large and medium hub airports levying PFCs are required to turn back up to 50 percent of their AIP enplanement formula funds, depending on the level of PFC receipts. These turned-back funds are then targeted for a discretionary fund for smaller airports (87 1/2%), as well as pure discretionary projects (12 1/2%) regardless of airport size. In fiscal year 1993, $57 million was targeted to small airport development as a result of "turnbacks." FAA estimates that $108 million will be turned back in FY 94.

Additional Sources of Airport Capital Development Funding

The Airport Improvement Program and the Passenger Facility Charge Program comprise only a portion of total airport development funding. The majority of airport capital funding is raised through the sale of airport bonds to investors. Airport bonds are normally revenue bonds -- bonds that are underwritten by a stream of revenue received by airports from landing fees. Since 1990, the issuance of airport bonds has averaged $4.5 billion annually.

State and local funding sources are also significant components of airport development. Through matching requirements in the AIP Program and independent airport development programs at the state level, approximately $500-$600 million in airport capital improvements are funded annually.

U.S. Deputy Secretary of Transportation Mortimer Downey testified at the Subcommittee's March 15th overview hearing on infrastructure needs that annual investment needs just for projects eligible under the AIP program are estimated at $7 billion. However, the total annual investment for such projects is estimated at $6.2 billion, leaving a shortfall of $800 million per year.

The following table estimates airport funding from all sources in FY 95:

Airport Capital Development Funding Estimates for FY 95
($ in billions)

Airport Bonds	$3.0
AIP	$1.7
State Contributions	$0.5
PFCs	$1.0
TOTAL	$6.2

Source: DOT

AIR TRAFFIC CONTROL SYSTEM INFRASTRUCTURE

The infrastructure of the air traffic control system is a complex web of radars, computers, weather detection equipment, navigation beacons, control towers, and en route centers linked together through a telecommunication network and staffed by more than 17,000 air traffic controllers and supervisors. Inadequate air traffic control infrastructure was cited as a principal cause of the airline industry's financial difficulties in testimony before the Aviation Subcommittee and the National Commission to Ensure a Strong and Competitive Airline Industry.

The Need for Air Traffic Control System Modernization

Although many of the aging components of our air traffic control system are in the process of being replaced (as will be described below), continued infrastructure investment is needed. For example, according to FAA, en route automation equipment is still primarily comprised of equipment dating back to 1950 and 1960 technology. Continued support of older systems results in significantly higher costs for providing service.

Modernization of the air traffic control system will help the airline industry by reducing their operating costs (through more direct routings, for example) and increasing aviation safety. As airline activity increases over time, the capacity limitations of the current air traffic control system will exacerbate the problems that airlines are facing unless system improvements are made. Delays will increase, causing airline operating costs to rise.

President Clinton wrote in his report, "A Vision of Change for America", "We must invest more in our people, our plants and equipment, our infrastructure, and our research and development if we are to restore the American dream for our children." The President cited the benefits of the air traffic control modernization program as "reduced air travel delays, more efficient aircraft routing, fewer accidents, and more cost-effective operation of the air traffic control system."

The Capital Investment Plan

The Capital Investment Plan [CIP] is the FAA's ongoing plan to modernize our nation's air traffic control system with new technology. The CIP consists of approximately 250 individual projects aimed at delivering solid state, digital automation to virtually every facet of the air traffic control system. Computer hardware, software, and displays used to control air traffic, radars, radio equipment, switches, landing systems, weather detection systems, data processing equipment, navigation beacons, and buildings that house air traffic control facilities and equipment will be replaced or upgraded under the Capital Investment Plan.

This air traffic control modernization effort began in 1982. According to an April 1994 U.S. General Accounting Office Report (GAO/RCED-94-167FS), the modernization effort is expected to cost approximately $36.2 billion through the year 2001. To date, approximately $17.8 billion has been appropriated; FAA plans to request the remaining $18.4 billion between fiscal years 1995 and 2001. By the end of 1993, FAA had completed 54 projects in the Capital Investment Plan, accounting for approximately $3.0 billion, or eight percent of the total estimated cost of modernization.

CIP Funding

CIP projects have been funded largely through FAA's Facilities and Equipment appropriation. This appropriation increased from $248 million in fiscal year 1982 to $2.12 billion in fiscal year 1994. FAA is seeking $2.27 billion for fiscal year 1995, a 7-percent increase over FY 94.

The table below illustrates historical funding for FAA's air traffic control modernization effort.

Facilities & Equipment Funding
($ in millions)

Fiscal Year	Authorizations	Appropriations
1982	$291	$260
1983	$725	$624
1984	$1,383	$760
1985	$1,407	$1,358
1986	$1,377	$895
1987	$1,164	$805
1988	$1,377	$1,108
1989	$1,730	$1,384
1990	$2,191	$1,721
1991	$2,500	$2,095
1992	$3,000	$2,409
1993	$2,700	$2,350
1994	$2,900	$2,120

Full funding of the Capital Investment Plan is in doubt at this time due to severe cost escalation and schedule slippages encountered with the Advanced Automation System. The Advanced Automation System is the centerpiece of FAA's modernization program and is intended to replace aging air traffic control equipment, increase controller productivity, and accommodate projected growth in air traffic through the use

of modern equipment and advanced software functions. Because the project's estimated cost has skyrocketed from $2 billion to up to $7 billion and delays of several years have been incurred, full funding of the system is not assured.

The Economic Impact of ATC System Modernization

FAA estimates that the $36.2 billion worth of air traffic control modernization projects planned, implemented, or underway will result in benefits of $285.0 billion dollars (1992 dollars) to aviation system users and to FAA. The following table lists Capital Investment Plan benefits by category:

	Capital Investment Plan Benefits ($ in billions)	
User Delay Savings	$171.0	(60.0%)
User Efficiency Improvements	$ 51.6	(18.1%)
Work Force Productivity Gains	$ 35.3	(12.4%)
Safety Improvements	$ 20.2	(7.1%)
Other User Savings	$ 6.9	(2.4%)
TOTAL	$285.0	(100.0%)

In addition to the economic benefits quantified above, the modernization program is expected to provide a system that is more sophisticated and receptive to technological innovation than the system which it is replacing and, therefore, more responsive to future aviation user needs. Most importantly, failure to continue modernizing the aging air traffic control system would result in a National Airspace System that lacks the level of safety and efficiency that the travelling public has come to expect.

AVIATION INFRASTRUCTURE NEEDS

THURSDAY, APRIL 28, 1994

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, DC.

The subcommittee met, pursuant to call, at 9:35 a.m., in room 2167, Rayburn House Office Building, Hon. Robert A. Borski (chairman of the subcommittee) presiding.

Mr. BORSKI. The subcommittee will come to order.

The subcommittee today will examine whether our Nation's aviation infrastructure needs are being met at a time when air passenger and freight traffic are crucial factors in our ability to compete in the global economy.

This hearing is the third in a series of hearings reviewing our Nation's infrastructure needs and funding programs.

There are serious questions about whether we are doing enough when passenger traffic is expected to increase by more than 50 percent in the next decade. Freight traffic has more than doubled in the past decade, and is expected to grow at a rate of 5.2 percent through the year 2010.

New aviation technologies, combined with the increased accessibility to air travel that was made possible by deregulation 15 years ago, has dramatically transformed aviation. Air travel has become essential for many people and the use of air freight is rapidly reaching that point.

We are faced with the question of whether the Federal programs that were designed to support the growth of aviation in its early stages are adequate to meet the needs of the post-deregulation age of global travel.

Since 1982, more than $15 billion has been invested in airport construction and expansion through the Airport Improvement Program. However, the rate of investment of the 1980s would have us falling further and further behind the needs of the coming decade.

FAA estimates that $30 billion will be needed by the end of the decade. The airport operators estimate that as much as $50 billion will be required.

In the United States of the 1990s, the aviation infrastructure is too important to allow any risk of deterioration. We must ensure that the infrastructure is adequate to support increased passenger and freight growth.

The funds we have for airport development must be targeted to high-priority projects that meet the needs of the greatest number of people and the largest movements of cargo.

We must also work to make sure that the ground transportation system at airports is adequate, both on the airport and approaching the airport. The efficient movement of people and goods must not stop at the edge of the runway but must be part of a total transportation system.

This year is especially difficult for the airports because of the failure of the Senate to approve a reauthorization bill. I hope we will be able to move quickly on a temporary funding bill.

FAA estimates that 33 airports will have delays of more than 20,000 hours each year by the end of the decade. Our national economy cannot afford the significant increase in delays that is projected for the near future.

Investment in the aviation system will be essential for improving our economic productivity and our ability to compete in the global economy. Our investment program must be able to support the levels of infrastructure investment that will maintain our aviation system as the best in the world.

The Chair would now like to recognize the distinguished Ranking Member, Mr. Inhofe.

Mr. INHOFE. Thank you, Mr. Chairman. I appreciate the opportunity to be at the hearing and to hear from the Administrator.

As a 7,000-hour commercial pilot, I am more than just passively interested in this subject, and also I am anxious and hoping that we will be able to address some of the details in the proposal of the administration, to corporatize the air traffic control system.

I have often said in my stock speeches, Mr. Administrator, that if I have to single out three of the best appointments in the administration, you are right at the top of that list. I think we are all very fortunate to have you.

I am looking forward to this hearing and also to hopefully have a chance to delve into some of the details of this proposed change. Thank you, Mr. Chairman.

Mr. BORSKI. The Chair thanks the gentleman.

The gentleman from California, Mr. Filner.

Mr. FILNER. Just briefly, I want to thank you for keeping our attention on the infrastructure needs, and your statement is certainly welcome, and my own area of San Diego is an example of some of the issues you raised, so I appreciate your focusing our attention on these needs.

Mr. BORSKI. The Chair thanks the gentleman. At this time, I would like to enter into the record the statement of Mr. Traficant of Ohio.

[Mr. Traficant's prepared statement follows:]

TESTIMONY OF THE HONORABLE JAMES A. TRAFICANT, JR.

BEFORE THE

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

HEARING ON AVIATION INFRASTRUCTURE NEEDS

APRIL 28, 1994

I want to thank you, Mr. Chairman, for holding this hearing and for according me the opportunity to submit testimony on aviation infrastructure needs. Without question, if America is to compete in the 21st century, we need to have a state-of-the-art transportation system. A vibrant, diverse and up-to-date aviation industry is central to achieving this goal.

I would like to talk today about a proposed project in my Congressional District that could serve as a model for the rest of the country. A dedicated group of economic professionals is working on a proposal to establish an air cargo jetport at Youngstown-Warren (Ohio) Regional Airport. This project has the strong support of Ohio Governor George Voinovich and I'd like to share the details of this proposal with the subcommittee, because I feel this proposal represents the type of project this country needs to embark on if we are to improve and expand our aviation infrastructure.

Several years ago, I worked closely with local officials and led the effort to create the Western Reserve Port Authority, which currently runs the Youngstown-Warren Regional Airport, and is leading the effort to establish the air cargo jetport. I worked to create the Authority because I felt it was important for the region to work together to maximize the potential of the local municipal airport. With proper management, expansion and vision, the local airport could serve as a key linchpin for economic development and diversification. The Authority, as part of their overall efforts to expand and improve the airport, has developed an excellent proposal to establish a unique facility at the airport.

The goal of the proposal is to construct an international, multi-modal transportation facility specifically geared to the special needs of modern manufacturing and assisting regional businesses in competing in the global marketplace. The project would include an airfield, state of the art cargo complex, road and rail access integrated into an industrial/commercial development under the auspices of the Western Reserve Port Authority. Other possibilities for the facility include a foreign free trade zone, international trade center, and research centers.

(next page)

The project represents far more than a local initiative designed to meet local needs. The goal is to attract major leading edge technology investments well into the 21st-century by providing a package of intermodal transportation facilities and state-of-the-art support services. A key component of the air cargo jetport will be direct access to railways and highways, as well as access to water transportation.

The project would call for the construction of two parallel runways 5,000 feet apart to permit two simultaneous arrivals. Land will be reserved, if possible, for a potential third parallel runway 2,500 feet from one of the two main runways. The length of the primary runways will be sufficient to allow a fully loaded DC-10 aircraft to take off on a hot day. The two major runways would serve primarily cargo aircraft.

A state-of-the-art common-use international/domestic cargo processing and distribution center will be constructed between the two main parallel runways. The center will be a multi-use, multi-tenant facility with multi-level container storage and building-to-aircraft loading capabilities. The center would have direct access to the interstate highway system and a direct link to interstate rail lines. The center would also be a foreign trade zone or a foreign trade subzone to further encourage import-export activity at the jetport.

In short, Mr. Chairman, this project would attract investment from the entire region and serve as a magnet for economic growth. Most significantly, it would serve as a valuable model for providing business and industry – in one complex – with direct access to all modes of transportation, as well as strong support services.

Equally as important, the project will fill a much needed void in the region. Air cargo is an important factor in Ohio's transportation network. More than a million tons of mail, freight and express shipments are handled each year at Ohio's five main airports – Cleveland, Columbus, Dayton, Toledo and Cincinnati. The growing volume of air cargo is taxing the already overburdened air passenger system. There is also a lack of international airlift capacity in Ohio. Most overseas cargo is trucked to Chicago, Detroit, New York, Miami, Los Angeles and other coastal gateways for shipment abroad. The average delay caused by the lack of international lift capacity in Ohio delays overseas cargo shipments by one to three days. As we all know, time is money.

The lack of an international airlift capacity in Ohio presents an unparalleled opportunity for the proposed air-cargo jetport. Not only would it fill a huge void in terms of providing international airlift capacity, it would also help relieve overcrowding and noise pollution at passenger airports in the region.

Mr. Chairman, this project is precisely the type of initiative Congress should strongly support. Unfortunately, most of the federal dollars spent on aviation go towards air passenger facilities. I would urge the subcommittee to consider that Congress should provide federal assistance for air cargo jetport projects. Not only would these projects help relieve congestion at air passenger facilities, they would

(next page)

also help American businesses maximize future export opportunities and also join together all modes of transportation so that American industry can get their products to the marketplace as soon as possible. Such initiatives are vital if the United States is to remain an economic powerhouse in the 21st century.

Mr. Chairman, I want to thank you and the members of the subcommittee for allowing me the opportunity to submit this testimony for the record. I would be happy to provide additional information and answer any questions you or the members of the subcommittee might have.

###

Mr. BORSKI. We would like to welcome our first panel this morning, Mr. David Hinson, Administrator, Federal Aviation Administration.

Mr. Hinson is accompanied by Ms. Cynthia Rich, Assistant Administrator for Airports, Federal Aviation Administration; and Mr. Martin Pozesky, Associate Administrator for System Engineering and Development, the Federal Aviation Administration.

I ask you to please rise and raise your right hands.

[Witnesses sworn.]

Mr. BORSKI. Welcome, Mr. Administrator, and you may proceed. Of course, we have your written testimony. It will be made a part of the record. You may proceed in any way in which you feel most comfortable.

TESTIMONY OF DAVID R. HINSON, ADMINISTRATOR, FEDERAL AVIATION ADMINISTRATION, U.S. DEPARTMENT OF TRANSPORTATION, ACCOMPANIED BY CYNTHIA RICH, ASSISTANT ADMINISTRATOR FOR AIRPORTS, AND MARTIN POZESKY, ASSOCIATE ADMINISTRATOR FOR SYSTEM ENGINEERING AND DEVELOPMENT

Mr. HINSON. Thank you, Mr. Chairman.

You have already introduced my colleagues, so I will dispense with that, but I would like to read a short statement, if I may.

I welcome the opportunity to appear before the Subcommittee today to discuss the FAA's aviation infrastructure programs.

As the Members of this Committee know well, one of the most pressing needs in our air transportation system is the need for additional capacity to handle projected air traffic. The airport capacity of today will not meet the air transportation demands of tomorrow. We project, for example, that U.S. air carriers will increase their enplanements by about 60 percent by the year 2005, an average increase of 4 percent per year. In that same time, total aircraft operations at airports with FAA air traffic control services are expected to increase by 23 percent, or about 2 percent per year.

In 1991, 23 of our airports experienced 20,000 hours of flight delays each year; 33 airports may fall into that category by the year 2002 if no capacity improvements are made. It is readily apparent that without substantial improvements in system capacity, passengers and air carriers will face added costs and increased delays.

The FAA is responding to this challenge in many ways. The Airport Improvement Program, or AIP, which is currently not authorized, permits us to assist in funding capacity projects, such as the construction of new runways or terminal improvements. An additional funding source, PFCs, or Passenger Facility Charges, is contributing an increasing proportion of the costs of eligible projects. The conversion of former military air bases to civilian use provides a means of expanding civil capacity as well. Other capacity improvements require the development and use of new technologies. More than three dozen programs, including the satellite-based Global Positioning System, or GPS, are in progress at the FAA to provide that new technology.

The Airport Improvement Program has been the traditional means of Federal assistance to airports to provide additional capac-

ity, and we are hopeful that a multiyear reauthorization bill for this program will be enacted soon. It is a major component of the financing necessary for airport planning and development, and it has provided the financial stability necessary for airports to obtain additional financing in the bond market for airport development.

Historically, AIP assistance has provided about one-quarter to one-third of the funding for the capital investment in airport infrastructure, with bonds providing another third. The remainder is financed by other airport revenues and Passenger Facility Charges. The continued Federal presence provided by AIP funding remains important to support the annual public spending expected in the near-term for airport development.

I would like just to take a moment to report to you on our AIP efforts in the last fiscal year.

During fiscal year 1993, the FAA issued 1,434 grants. In Fiscal Year 1993, we devoted a record $715 million in AIP funds to capacity infrastructure improvement. Capacity enhancement projects at primary airports continued to receive priority consideration under the discretionary portion of the AIP program, where we are allowed to target funding.

We have also funded work to provide new, relocated or extended runways at a number of key airports throughout the country. Most of these runways are needed to accommodate a gradual increase in activity due either to airline hub operations, such as Dallas/Fort Worth and Salt Lake City, or the growing demands of metropolitan areas, such as Washington Dulles.

Other projects, such as the one planned in Philadelphia, will increase capacity by permitting independent approaches to parallel runways during all weather conditions, which is not possible under the current configuration.

The Military Airport Program, established as a key component of the AIP, provides an important opportunity for new capacity. Fiscal Year 1993 brought an additional 4 military airports into the program for a total of 12, as well as an increase in set-aside funding. There is substantial airport infrastructure available for conversion throughout the country, which can provide valuable added capacity to complement capacity efforts at current civil airports.

We have also recently reviewed our Letter of Intent, or LOI program. As a result, we have developed a proposed LOI policy that assures we use LOIs only to invest in airside development projects providing the best system-wide capacity benefits.

This new policy proposes to allow funding for airside development projects. It will require more rigorous analyses of the sponsor's financial commitment and the benefit-to-cost ratio of the projects, especially given the limited amount of funds available for LOI projects. The policy will be published in the very near future for comment by all interested parties. The FAA intends to use this policy in considering all future LOI requests. However, I would like to point out no new LOIs can be issued until the FAA has enabling legislation.

We are implementing a program to enhance the AIP investment criteria as well. The program is ongoing. Ultimately, it will include goals and performance measures for a National airport system that

is fully consistent with the National Transportation System, or NTS.

In addition, we are currently considering various innovative financing mechanisms to encourage more capital investment from the private sector to enhance our transportation infrastructure.

To supplement AIP grant assistance, many commercial service airports now have available to them a new source of funding—PFCs, or Passenger Facility Charges.

As of April 1994, we have approved a total of $9.3 billion in Passenger Facility Charges throughout the country since collections began in June of 1992. When a large or medium hub airport imposes a PFC, its AIP entitlement funds are reduced by a set proportion. These funds, also known as turnbacks, increase the amount of AIP discretionary assistance available to airports nationwide.

Entitlement reductions increased our AIP discretionary funds by over $57 million in 1993 and are expected to exceed $100 million in 1994, depending on reauthorization legislation. Together, the AIP and PFC programs provide the investment in infrastructure that is so important to the economic well-being and growth of our air transportation industry. In addition, PFCs provide a predictable funding stream that gives airports the added flexibility they need for long-term planning and development projects.

We are also pursuing a variety of technological improvements that will add to the FAA's investment in the infrastructure, providing increased safety and efficiencies in our air transportation system.

FAA continues to press for development and exploitation of technologies that will increase system capacity, and for installation of capacity-enhancing navigational aids and facilities. In Fiscal Year 1981, FAA developed the National Airspace System, or NAS plan, which was the blueprint for modernization of the air traffic control system.

Since that time, the FAA has issued a comprehensive statement of capital needs, known as the Capital Investment Plan, or CIP. The CIP is based on a detailed capital planning process and contains projects complementing the original NAS plan baseline program to update and maintain America's air traffic control system.

While the United States' air transportation system operates very safely and efficiently, delays are a continuing concern, especially at major hub airports. Although more than half of all delays are due to adverse weather, CIP investments can provide increased capacity through better use of air traffic control and management automation systems.

The continuing growth in the volume and complexity of aircraft operations will place unprecedented demands on the NAS system through the turn of the century. The 1993 Capital Investment Plan describes the FAA's efforts to prepare for these increasing demands by investing in infrastructure modernization. Users of the NAS system will benefit from improvements in flight service, more efficient routing, reduced delay, and enhanced safety.

I do want to just insert one sentence here, Mr. Chairman, and tell you that we have been rather successful with the NAS plan, and I want to talk about that for just a minute.

Overall, we have made substantial progress in implementing the CIP, and many of our major efforts have begun to deliver tangible benefits to today's passengers. Over 85 percent of the systems covered by the original NAS plan have been delivered, including 183 radars, 273 airport surface observing systems, and 110 low-level wind shear alert systems.

The benefits realized since 1981 total $35 billion in 1992 dollars. These benefits come from minimizing delays caused by air traffic congestion and downtime of old, obsolete equipment. These improvements have led to savings in FAA operations and maintenance expenses and increased productivity for air carriers and other users.

To meet worldwide air traffic demands, fundamental technologies and procedures of the future system must be global. Satellite technology, for example, will become an increasingly attractive option for providing regional and worldwide services. For this reason, the 1993 CIP reflects a new policy direction for the National Airspace System.

Our accelerated commitment to a satellite-based navigation system that uses GPS as its foundation is ongoing. GPS is now an operational part of the U.S. air traffic control system. The FAA has certificated the first two GPS signal receivers for oceanic domestic en route, terminal and nonprecision approaches. And Department of Defense specifications for initial system operation have been accepted by the FAA for civil aviation purposes.

In the future, aircraft will relay positional signals from their GPS receivers to ground stations, increasing safety and accuracy and reducing costs of aircraft operation. Airlines will save millions of dollars each year in fuel costs.

I might add here that in this past winter Continental Airlines in Colorado has installed GPS at Aspen and has indicated to us a substantial savings in the nondiversion of passengers as a result of GPS. In fact, they say they have already paid for the installation in their aircraft.

In closing, Mr. Chairman, I would like to stress that the FAA shares your concern for ensuring that there is adequate infrastructure to support the projected growth in air transportation well into the next century. We are working on ways to expand airport capacity through AIP-funded projects. And we are investigating the technological improvements necessary to ensure that our air traffic control system remains the world's safest and most efficient.

That completes my prepared remarks, Mr. Chairman. We would be pleased to answer your questions.

Mr. BORSKI. Thank you very much, Mr. Administrator.

Let me ask first, what steps is the FAA taking to ensure that there is adequate funding available for new Letters of Intent?

Mr. HINSON. The funding available for Letters of Intent is for all practical purposes reasonably set for 1994 and 1995; 1996 will offer the first opportunity for substantial additional funding for LOIs.

Mr. BORSKI. What is the timetable for issuing your Letter of Intent policy?

Mr. HINSON. Very shortly, within the next 60 days.

Mr. BORSKI. If the reauthorization bill is passed in the meantime, at least a temporary one, will you be approving new Letters of Intent before your new policy is completed?

Mr. HINSON. I don't think we are going to approve any Letters of Intent until after our policy is issued and we see what happens to the AIP legislation, no, sir. We will have to wait.

Mr. BORSKI. A little later this morning the witness for the Air Transport Association will testify that FAA seeks to achieve a regionally balanced approach to its discretionary AIP funding, but that the most important factor of all, need, is absent from the evaluation.

The net result is that high-traffic airports in critical locations with important capacity or safety projects may find themselves without funds while airports in other locations which are promoting lower priority projects may be awash in money. Would you care to respond to that?

Mr. HINSON. Well, I think the dispensation of AIP funds over the past decade will demonstrate that a majority of the funds have gone to those airports that provide services to a majority of the passengers. In fact, well over 50 to 60 percent of the funds, I believe, have gone to those airports that handle some 90 or more percent of intercity passengers carried by air, and in fact I think historically the amount of money that has flowed to airports has been relatively proportional to the passenger traffic.

Now, there are some exceptions to that, money to reliever airports, for example, but that has another purpose—to enhance capacity at the primary airports. On balance, I believe that the money has flowed fairly evenly if you look at the intercity passenger relationship to where the funds have gone.

Mr. BORSKI. Mr. Hinson, FAA does not develop a regular assessment of aviation infrastructure needs in the same way that FHWA and FTA do in their biennial report on the status of the Nation's highways, bridges and transit. Would it be useful in setting priorities for infrastructure investment for the FAA to compile such an assessment of needs in the way the Federal Highway and the Federal Transit Administration do?

Mr. HINSON. The short answer, Mr. Chairman, is of course. However, I am not certain that we don't do that in some fashion.

For many, many years the FAA has had an annual forecast conference, both for air carrier and general aviation, where we predict for an extended 12-year period our forecasts for growth in air traffic, our forecasts for growth in air traffic movements, the number of aircraft that will have to be handled in the system, the number of instrument approaches that will occur. In total, the entire spectrum of aviation operations that we expect to see in the next 12-year period.

Historically, those forecasts have been rather accurate, and I just happened to remember that in 1983 we had one forecast for revenue passenger miles for 1993, and 10 years later we missed it by eight-tenths of one percent. We have forecasts and models that run this. In fact, one or two of our government contractors have sophisticated models for forecasting demand in the system not only from air traffic but from airports as well. Whether or not what we do

falls into exactly the same category you described, I am not certain, but I can get back to you with an answer on that, if you would like.

[Subsequent to the hearing, the following was received from the FAA:]

The FAA's forecasts of aviation activity provide critical input for FAA reports serving a purpose similar to that of the FHWA and FTA biennial reports/assessments. Specifically, the FAA's Aviation System Capital Investment Plan, Aviation System Capacity Plan, National Plan of Integrated Airport Systems, and Strategic Plan assess the infrastructure needs of the national airport and airspace system in light of projected demand.

Mr. BORSKI. I am curious further not just in capacity needs but in the infrastructure needs of particular airports, if that is——

Mr. HINSON. I guess where I was coming from is the capacity or the demands that we expect drive the question of capacity which in turn drives how many new runways you would like to have.

Mr. BORSKI. Mr. Administrator, funding for the Airport Improvement program has been reduced over the last several years. It seems to me that in a time when infrastructure needs of the Nation's airports continue to grow, such funding reductions are problematic.

The committee has recommended that the fiscal year 1995 budget resolution provide at least the fiscal year 1995 authorized level passed by the House, $2.161 billion in order to meet our Nation's airport infrastructure needs. The administration, however, recommended only $1.69 billion. Why the discrepancy and what is the difference and what would you prefer to see?

Mr. HINSON. I think, Mr. Chairman, our forecast for the next four years, including fiscal year 1994, are 1.69, 1.69, 1.79, and 1.89, which would be the four-year horizon.

The level of 1.69 for 1994 and 1995, we believe, is adequate for the demand that we see at the moment. We are obviously in a budgetarily constrained environment, and in the necessary gives and takes that are required when we do our analysis, this is a level which we believe will provide adequate funding.

Mr. BORSKI. The gentleman from Oklahoma.

Mr. INHOFE. Thank you, Mr. Chairman.

Mr. Administrator, in your testimony you addressed the GPS progress that has been made, and I applaud you for that.

It happens that this weekend I am speaking to the National Aviation Electronics Association, and they are going to be interested in as much detail as possible.

You mentioned that the GPS is now an operational part of the U.S. traffic control system; the FAA has certificated the first two GPS signal receivers for oceanic, domestic, terminal, and nonprecision approaches. Just how current is this information? When did the last certification take place?

Mr. HINSON. Congressman, in February. As you know, Mr. Pozesky is here, and I call him Mr. GPS at the FAA.

Mr. INHOFE. He can testify if he wants to.

Mr. HINSON. While I could answer that in broad terms, let me ask Mr. Pozesky to give you the specifics of this.

Mr. POZESKY. Yes, Mr. Inhofe, we certificated, I believe, two receivers. One was, and I can give you the manufacturers' names if

you like, in February, and that has a little chip in it that allows it for precision approach right now.

Mr. INHOFE. Excuse me, you said nonprecision, didn't you?

Mr. POZESKY. Excuse me, nonprecision, I am sorry. Nonprecision, that is correct. It has a little chip in it that actually has the approach plates built into the receiver, and that is updated regularly, which is what is required to do that.

Mr. INHOFE. Do you remember which manufacturer has that right now?

Mr. POZESKY. That is a Garman device, the one I am thinking of, and I believe there is one, Trimble, also has a device which is certified and Honeywell is very, very close on their heels. This changes every week.

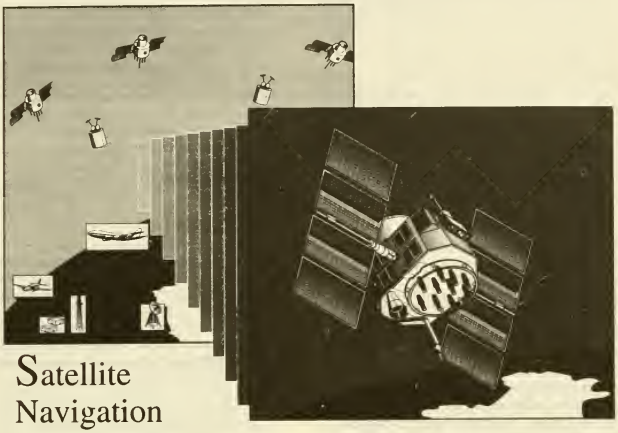
I would be happy to call your office and give you the precise information today, if you would like.

Mr. INHOFE. This is what I would request, if you would call our office, call Ruth some time, oh, by tomorrow. I would like to get as much up-to-date information, and also include in that material what your anticipations are on precision approaches.

Mr. POZESKY. We have a fact sheet that I think you would find probably useful for the purposes you are talking about. It kind of lays out our program, what we anticipate with some of the dates on it. I will be happy to get that up to your office today.

Mr. INHOFE. That is fine, Mr. Pozesky.

[The information received from FAA follows:]



Satellite Navigation Concepts for Early Implementation

January 1994

Second Edition

U.S. Department of Transportation
Federal Aviation Administration
Washington, D.C.

SATELLITE NAVIGATION CONCEPTS FOR EARLY IMPLEMENTATION

Second Edition

Joseph Dorfler
FAA Satellite Program Office
Washington, D.C.

Robert Loh
Ronald Braff
Center for Advanced Aviation System Development (CAASD)
The MITRE Corporation, McLean, Virginia

BACKGROUND

Today, no single technology has more broad reaching potential for civil aviation than the future applications of satellite technology. These applications would represent the greatest opportunity to enhance aviation system capacity, efficiency, and safety since the introduction of radio-based navigation more than fifty years ago. The Federal Aviation Administration (FAA) has responded to this potential through initiation of a comprehensive satellite program involving government, industry and users to expedite research, development and field implementation of satellite-based navigation services. To this end, the following parallel activities have been initiated:

- The first edition of the *FAA Satellite Navigation Program Plan* was published in 1992 and is updated annually. It was originally developed and is being constantly refined to satisfy user and FAA needs. It provides the scope, objectives, schedules, and other requisite planning information for implementing satellite navigation in the National Airspace System (NAS). The work program covers all required activities for implementation of satellite navigation in all phases of flight, including precision approaches.

- The FAA established a Satellite Operational Implementation Team (SOIT) on 19 August 1991, to facilitate the introduction of satellite navigation and communications into the NAS. The team consists of FAA experts in aviation and flight standards, avionics certification, instrument flight procedures, and other operational areas. The team has developed and approved the process, procedures, and standards for operational use of the Global Positioning System (GPS) for all phases of flight down to nonprecision approaches. First, on 25 February 1991, for using GPS as an additional sensor input to an approved multisensor navigation system. On 10 December 1992, a Technical Standard Order (TSO) was approved describing required capabilities of GPS receivers to be used as a supplemental means of navigation, and on 9 June 1993, FAA approved supplemental use of GPS (with TSO certification) receivers for all phases of flight except precision approach. In 1994, FAA is expected to approve Order 8400. DGPS for special Category (CAT) I operations using differential GPS.

- The *RTCA Task Force Report on the Global Navigation Satellite System (GNSS) Transition and Implementation Strategy* (September, 1992). At the request of the FAA, two RTCA task forces were formed. The task forces were composed of representatives from external users (commercial, business, and general aviation), industry, the airports, the U.S. Department of Defense (DOD), and the FAA. Task Force I was formed to develop a consensus strategy with recommendations

regarding early implementation of an operational GNSS capability in the United States. Task Force I reached a solid consensus that the user community wants, needs, and is ready to implement GNSS-based operations, and that the benefits will apply to virtually all aspects of aviation operations. Task Force II was formed to develop a consensus on the implementation strategies for early operational use of data link in air traffic control, including the means for transmitting differential GPS corrections. The task force recommended use of the very high frequency (VHF) data link or the Mode Select (Mode S) squitter for differential corrections.

- To assist Task Force I, two papers were prepared to provide FAA perspectives for achieving use of the GPS over the next ten years, *Achieving Early Use of GNSS: An FAA Perspective* (December, 1991) and *Satellite Navigation Concepts for Early Implementation: The FAA's View* (August, 1992). The papers presented the FAA's view for resolving concerns about meeting NAS requirements for integrity, accuracy, availability, continuity of service, and transition from the current ground-based systems. They also describe user and FAA roles and responsibilities for achieving early implementation.

- *Federal Radionavigation Plan (FRP).* The Department of Transportation (DOT) (including FAA) and DOD have jointly developed the U.S. Government requirements and plans for radio navigation systems in the U.S. to satisfy all modes of transportation. The plan is updated biannually and includes current and future requirements from all users and modes of transportation in the U.S.

This paper is the second edition of the above mentioned satellite navigation concepts paper. The intended audience is the worldwide civil air navigation users, manufacturers, and civil aviation authorities like the FAA. It is an information paper on how the FAA is providing the foundation for augmentations to GPS so that satellite navigation evolves from an R&D program to a multisensor system, to a supplemental system, and finally to a GNSS that meets the required navigation performance (RNP) for each phase of flight. The simplified definitions for the different levels of GPS user service for each phase of flight are as follows:

- *Multisensor system* implies that GPS can be used for navigation, but only after it has been compared for integrity with another approved navigation system in the aircraft.

- *Supplemental system* implies that GPS can be used alone without comparison to any other navigation system. However, another approved navigation system must be on board the aircraft and usable if GPS is not available.

- An *RNP system* meets all requirements without the need for any other navigation equipment on board the aircraft. An RNP system may include one or more navigation sensors in its definition (e.g., GPS with inertial reference system).

INTRODUCTION

Over the years, various ground-based radionavigation systems have been implemented to provide reasonably precise and reliable positioning information for navigation. Systems such as the Very High Frequency Omnidirectional Range/Distance Measuring Equipment (VOR/DME), Loran-C, Omega and Instrument Landing System (ILS) have provided navigation capabilities, but for some phases of flight all are limited in either coverage or accuracy, or both. Therefore, users must carry several types of receivers to obtain navigation service for all phases of flight.

The future vision for navigation rests with the use of satellite technology to provide continuous, reliable, accurate positioning information to users for all phases of worldwide flight. The foundation for this vision is the GPS, a satellite-based radionavigation and time transfer system operated and controlled by the DOD. Planned to have initial operational capability in 1993, GPS will consist of 24 satellites.

Because GPS satellite signals are propagated independent of the ground and employ a signal structure that permits accurate range and range-rate measurement to

each satellite, signal propagation problems that affect the accuracy of the land-based systems can be minimized. However, GPS accuracy is affected by various other factors, including satellite clock errors, satellite position errors, receiver errors, and tropospheric/ionospheric conditions.

According to present DOD policy, two levels of GPS service will be provided:

- The Standard Positioning Service (SPS) will be available to any user worldwide with commercial receiver equipment. Its accuracy will be adjustable by DOD in accordance with national security interests. It is specified to have a 95 percent accuracy of 100 m (horizontal) and 140 m (vertical).

- The more accurate Precise Positioning Service (PPS) will be limited to military and authorized civil users only.

While GPS without any augmentations represents a significant improvement over existing methods of navigation, it has limitations for use in civil aviation. These include the following:

- Since the satellites rotate about the earth in inclined orbits, the availability of at least four satellites with sufficient geometry for position determination is a function of user location and time, as well as the satellites' reliability. A coverage outage due to failed satellites can encompass a very wide area for several minutes until a new satellite rises into view.

- Signal integrity is monitored on board the satellites and by the GPS operational control segment. The on-board monitoring cannot detect all of the signal failure modes. Although the operational control segment can detect all failure modes, its response time in issuing warnings to users through the satellites is on the order of minutes, whereas civil aviation's requirements are on the order of seconds. Signal integrity can be determined within the user receiver by algorithmic techniques called receiver autonomous integrity monitoring (RAIM). However, RAIM satellite-malfunction detection, without aiding from other system(s), requires the reception of at least five satellites with good geometry. At least six satellites are required for identification of a malfunctioning satellite. Based on the planned 24 GPS satellite constellation, six satellites with proper geometry will not be sufficiently available to satisfy RNP requirements. However, for oceanic operations, nearly all aircraft have other navigation systems to provide the necessary aiding.

- GPS SPS provides highly accurate coverage for the oceanic en route, continental en route, terminal, and nonprecision approach phases of flight. However, its accuracy is not sufficient for precision approach.

The GPS SPS, even without augmentation, offers substantial benefits to civil aviation users and can be used by everyone. Today's integrated circuit and microprocessor technology means that GPS receivers, even with potential augmentations, are small and low cost enough for widespread use.

To satisfy aviation needs, as cited above, the FAA is evaluating a number of candidate configurations in which the GPS SPS is augmented by various systems. Moreover, the future of satellite navigation includes the evolution to a GNSS--a single, worldwide system available to multiple users (airlines, business, and general aviation) throughout all phases of flight.

AUGMENTATIONS AND BENEFITS

The following candidate augmentations for GPS are key to the program plan and are designed to overcome the limitations summarized earlier.

GPS with Altimeter Input. FAA analysis indicates that GPS augmented with barometric altimeter will significantly increase the availability of RAIM during those periods when the satellite geometry is not sufficient. There is a requirement for altimeter input in the existing FAA TSO C-129, dated 10 December 1992.

GPS Integrity Broadcast. To further increase the availability of GPS signal integrity monitoring, the FAA is investigating the implementation of a network of

ground monitors covering the conterminous United States (CONUS), see Figure 1. These monitors would disseminate integrity information on each GPS satellite via geostationary satellite relays with large coverage areas as shown in Figure 2, using Inmarsat as an example. It is expected that, eventually, there would be a worldwide network of GPS Integrity Broadcast (GIB) satellites. With GIB and at least four satellites in view with good geometry, GPS would be usable for all phases of flight, except precision approach. The original concept, known as the GPS Integrity Channel (GIC), has been changed. GIC is now part of the Wide-Area Augmentation System (WAAS) program, which includes GIB, Wide-Area Differential GPS (WDGPS), and a wide-area ranging signal for position determination. FAA is also cooperating with DOD and other satellite providers to investigate both civil and military integrity requirements, and the development and implementation of a mutually beneficial integrity solution.

GPS and Inertial Reference System. Many air carriers and business aircraft are fitted with inertial systems. It has long been recognized that a combination of GPS and an inertial reference system is more accurate than inertial navigation alone and provides notably better availability than GPS alone. However, in the presence of selective availability (SA) this hybrid configuration will still not meet precision approach accuracy and integrity requirements without differential GPS augmentation (see below discussion of differential GPS).

GPS and Loran-C. Loran-C is a supplemental radionavigation system requiring signals from at least three ground transmitters for position determination. Integrity monitoring for the radiated signals is provided by the U.S. Coast Guard and the FAA. Loran-C is not as accurate as GPS. It also does not enjoy the worldwide coverage of a satellite navigation system, and in many areas there is a lack of redundant signal coverage. While forfeiting some of GPS's accuracy, an integrated GPS/Loran-C would have an availability significantly greater than that of either system alone, and Loran-C signals can be used as additional sources for RAIM integrity monitoring.

GPS and the Global Navigation Satellite System (GLONASS). GLONASS is operated and controlled by the Russian Federation. It will offer a worldwide navigation and timing service for civil users comparable to GPS. With an integrated GPS/GLONASS capability, users will have a significantly greater number of satellites in view continuously. This will provide sufficient RAIM availability for all phases of flight up to nonprecision approach. Thus, this double-satellite combination could eventually evolve into the envisioned GNSS for all phases of flight with the exception of precision approaches.

Local-Area Differential GPS (LDGPS) for Precision Approach. LDGPS involves the use of GPS ground monitors at known locations near or at the airport to determine the errors in the satellite signals and to transmit error correction messages. LDGPS will make it possible to conduct precision approaches at any runway within its coverage area. Important safety benefits will result because both horizontal and vertical center line guidance will be provided throughout the approach, no alignment or transition is required. Moreover, if aircraft can be directed to all available runways during instrument meteorological conditions, significant improvements in capacity and terminal airspace utilization will be possible. LDGPS may also be used for airport surface position determination and situational awareness, and as a sensor for automatic position reporting for airport surface surveillance.

For accuracy that satisfies CAT I, the coverage radius depends upon the service volume of the transmission and could be as far as 50-100 miles from the LDGPS ground station. For the near term, the broadcast of choice for LDGPS is a local terrestrial link such as VHF. Pseudolites (ground-based transmitters with GPS-like signals) or Mode S squitter may be better long term solutions.

As noted earlier, the main operational advantage of differential GPS is that it will provide the capability for conducting precision approaches at any runway within its coverage area and may provide runway surface position determination and surveillance. Particularly in conjunction with an inertial reference system, it should be possible to attain CAT I accuracy and continuity of service when the satellite geometry provides sufficient GPS accuracy in the vertical direction. LDGPS have been tested and found to have sufficient accuracy to satisfy CAT I precision approach requirements. Different types of LDGPS are also being evaluated to determine their feasibility for CAT II and III precision approaches. It is assumed that any use of GPS for precision approach beyond CAT I will not be implemented until sufficient experience is obtained. Consequently, this capability is not addressed here. However, it is noted that the FAA has initiated a program with industry to produce prototype

Differential Global Positioning System (DGPS) designs that can demonstrate CAT III accuracy and integrity requirements. Evaluation of these systems is scheduled for FY 1995. With Differential GPS/GLONASS there is also potential to meet accuracy and availability/continuity of service for RNP for CAT I or Near CAT I precision approaches.

Wide-Area Differential GPS (WDGPS). WDGPS includes a number of monitor sites that pool their data at a central location and estimate individual corrections for each of the major systematic error types (e.g., atmospheric, satellite clock bias, and satellite position). WDGPS is not as accurate as LDGPS; however, it requires a significantly smaller number of ground sites to derive differential corrections for the many runways in the United States that would benefit from a precision approach capability. It may be implemented as an enhancement to the GIB. The broadcast of choice for WDGPS is a GPS frequency transponder on a geostationary satellite to provide a wide-area coverage that would be usable over an entire continent. Initial testing at the FAA Technical Center has shown very promising results. With suitable avionics, CAT I precision approaches may be performed using a high performance autopilot coupled to a WDGPS receiver. Additional testing and verification are being performed. At a minimum for hand-flying, a CAT I or Near CAT I precision approach accuracy may be provided everywhere within sufficient coverage of the WDGPS signal and GPS satellites.

Wide-Area Ranging Signal. A wide-area GPS-like ranging signal can also be included as part of the geostationary satellite broadcast. It can be a cost effective method to provide additional GPS coverage and availability at a fraction of the cost of an additional GPS satellite.

Wide-Area Augmentation System (WAAS). FAA is in the process of implementing a WAAS system that includes the GIB, WDGPS and a wide-area ranging signal. All three capabilities can be provided through the same network of ground stations connected to a master control station that feeds the consolidated information to a ground earth station. The ground earth station sends the information, with the correct timing, to a transponder on a geostationary satellite that relays the GPS-like signal to all users over a very large area. For example, a transponder on an Inmarsat geostationary satellite over northern Brazil can broadcast the information to all users over North and South America (except for Alaska). The geostationary satellite broadcast is completely processed in a user's GPS receiver. Additional testing and analyses are required to determine the actual number of ground monitor stations, master control stations, ground earth stations, and geostationary satellites needed to provide the integrity, availability and accuracy for the augmentation of GPS to be an RNP system for all phases of flight down to CAT I precision approach. A government study is being performed by a DOD/DOT Task Force to determine optional integrated systems to provide GPS augmentations to all civil users.

OPERATIONAL IMPLEMENTATION

To help ensure a timely transition to an operational status, a number of operational implementation efforts will be conducted concurrently with the augmentations mentioned previously. The successful transition to satellite-based technology for NAS operations is based on three fundamental concepts: Properly identify the users; understand their requirements; and actively support their participation in the process. The users include both external aviation industry groups and internal FAA offices. External examples include avionics and aircraft manufacturers, airline companies, business and general aviation; whereas internal users include FAA Flight Standards, Certification, and Air Traffic. In order to coordinate and centralize this process, the FAA created the SOIT, which has become an important part of the operational implementation process as exemplified by the following key activities:

Standards Support. Operational approval of GPS depends upon demonstrating that the system satisfies continuity of service and performance requirements for a given type of operation. The initial thrust has been focused on developing the requisite guidance material to support GPS operations in the NAS using existing procedures. Subsequent activities will be directed at developing new procedures and criteria to exploit the full potential of increased position, velocity, and time accuracies inherent in satellite-based navigation systems. For example, the SOIT is developing the requirements for a precision approach tunnel, where the total system errors for precision approaches are considered. Total system errors include all errors such as sensor errors and flight technical errors.

Aircraft Certification Support. Several avionics manufacturers are currently designing and producing GPS receivers for use in civil aircraft to satisfy the RTCA Minimum Operational Performance Standards (MOPS) and the FAA's TSO for supplemental use of GPS down to nonprecision approaches. Aircraft operators are anxious to equip their aircraft with GPS equipment. This activity is designed to assist certification personnel in developing a firm set of GPS standards and to provide technical expertise to enhance their understanding of the issues associated with the various aspects of the GPS technology. Additional TSOs and Advisory Circulars will be developed as needed.

Air Traffic Support. To take full advantage of the technical features inherent in GPS, civil aviation will require the full approval of GPS-based operations by the appropriate air traffic services authority. These activities assist in the development of the requisite air traffic control procedures to enable optimum handling of satellite navigation equipped aircraft. Initial focus will be on using GPS as a navigation source that is transparent to the air traffic services. Subsequent efforts will concentrate on developing GPS unique procedures in conjunction with the advance automation system deployment. Analyses of GPS coverage/availability and traffic/capacity enhancements will be performed concurrently to assess the use of GPS during the transition period in areas where only GPS navigation is available, and when the augmented GPS becomes the RNP system in the NAS.

INTERNATIONAL ACTIVITIES

A number of efforts will be undertaken to enable the U.S. to assume and maintain a worldwide leadership role in promoting the adoption of satellite-based navigation systems. Activities will be conducted in the following areas:

GPS /GLONASS

While neither GPS nor the GLONASS system alone is capable of meeting all the requirements of civil aviation, it is conceivable that the integrated use of GPS and GLONASS could result in a stand-alone civil aviation navigation system. Integrated use could afford enough redundant measurements to detect and isolate anomalies with RAIM using only satellite sources. Integrated use of GPS and GLONASS, therefore, holds a major potential for providing enhanced economy and safety in civil aviation. This project has determined that a combined GPS/GLONASS receiver is feasible and that the differences between the two systems can be overcome.

Future Air Navigation System (FANS)

The FANS Committee of the International Civil Aviation Organization (ICAO) has proposed the concept of a future satellite-based air traffic control system and is in the process of developing required characteristics of a GNSS. At the tenth ICAO Air Navigation Conference held in Montreal in September 1991, the United States formally offered GPS as a candidate component of the GNSS, and reconfirmed that offer at the 29th ICAO assembly meeting in 1992. The U.S. will continue to play an active role in all FANS activities leading to cooperative development and establishment of an internationally accepted satellite-based navigation system.

Bilateral Technical Data Exchange Agreements

The U.S. has also entered into a number of bilateral technical data exchange agreements aimed at addressing specific technological areas of mutual interest. Existing agreements cover many technical aspects, such as geo-stationary satellite overlay (with France and Canada), surface traffic management (with Sweden), and GPS/GLONASS (with the Russian Federation) and early implementation and procedures development (with Fiji). Additional bilateral agreements may be executed in the future as additional needs and international interests evolve.

RELATED FAA PROGRAMS/PROJECTS

The introduction of GPS with its unprecedented worldwide position, velocity, and time accuracy may affect the development and operation of current or planned systems for the NAS. In extreme cases, the potential capabilities of satellite navigation may render a current or developmental system obsolete. Consequently, the objectives of this activity are to:

- Provide technical expertise to other program or project managers to help assess the benefits and/or impacts of satellite navigation systems in their areas of interest;

- Where appropriate, recommend satellite navigation systems as an alternative or replacement method of determining position, time, or velocity information;

- Where appropriate, promote the use of satellite navigation systems to provide position, time, or velocity information, and

- Provide FAA management with a focal point for determining how satellite navigation technology may be used to improve current systems and systems in development.

CONCLUSION

GPS and its various augmentations will greatly enhance navigation services to users over what is available today. Improvements in coverage and accuracy, will yield safety, economic, and convenience benefits to civil aviation users worldwide. Potential required navigation performance is summarized by flight phase in Table 1. Figure 3 is a top-level summary of the FAA's projected civil aviation operational implementation of GPS. This FAA implementation arrives in three "waves" or phases: GPS as an input to multisensor navigation (approved in 1991); GPS as a supplemental navigation system (approved in 1993); and GPS augmented for required navigation performance (2000). In the near term, LDGPS for Special CAT I (SCAT-I) sensories can be implemented by the users themselves at specific airports. These will be privately owned and certified by the FAA on a case-by-case basis. The development and implementation of GPS receivers should coincide with the three waves of GPS augmentation. However, depending on user requirements, not all three waves of GPS capabilities are needed and an individual user may be satisified with any one of these waves. The culmination of this vision will be the GNSS, available globally and continuously to all categories of civil users for all phases of flight. Then the user can expect to obtain complete radionavigation service for all phases of flight with the same receiver.

Table 1. Potential Performance Summary by Flight Phase Augmented for Required Navigation Performance (RNP)

System	Flight Phase														
	Oceanic			En Route			Terminal			Nonprecision Approach			Precison Approach		
	A	I	C	A	I	C	A	I	C	A	I	C	A	I	C
GPS (with altimeter)	●	?	?	●	○	?	●	○	?	●	○	?	○	○	?
GPS (with GIC)	●	●	?	●	●	?	●	●	?	●	●	?	○	○	?
GPS/IRS	●	●	●	●	●	●	●	●	?	●	●	?	○	○	?
GPS/Loran C	●	●	?	●	●	●	●	●	●	●	●	●	○	○	?
GPS/GLONASS	●	●	●	●	●	●	●	●	●	●	●	●	○	○	?
DGPS	F/A			F/A			●	●	?	●	●	?	●	●	?

Parameter Code

A Accuracy performance
I Integrity capability
C Coverage/availability
F/A Possible future application

Performance Level

● Adequate
○ Does not have
? Uncertain

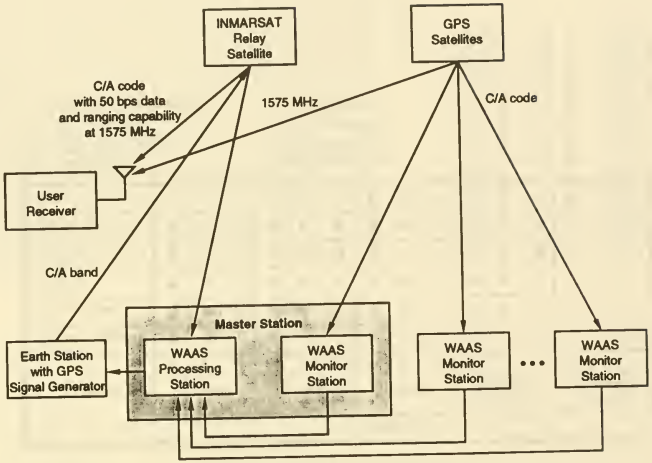


Figure 1. Preferred WAAS System Configuration

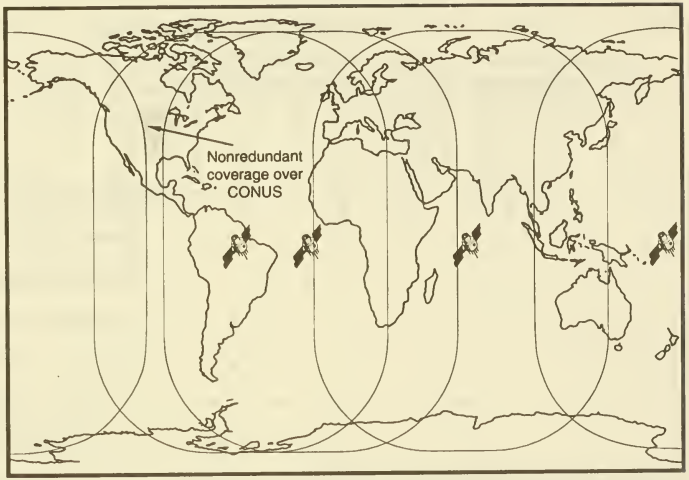


Figure 2. Footprints for the Inmarsat-3 Satellites with a Mask Angle of 5 Degrees

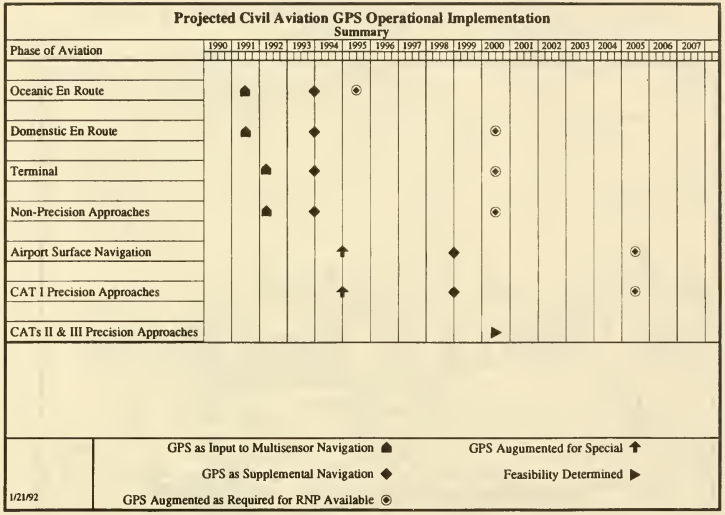


Figure 3. Projected Civil Aviation GPS Operational Implementation Summary

GLOSSARY

CAT	Category
CONUS	conterminous United States
DGPS	Differential GPS
DOD	Department of Defense
DOT	Department of Transportation
FAA	Federal Aviation Administration
FANS	Future Air Navigation System
FRP	Federal Radionavigation Plan
GIB	GPS Integrity Broadcast
GIC	GPS Integrity Channel
GLONASS	Global Navigation Satellite System
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
LDGPS	local-area differential GPS
Mode S	Mode Select
MOPS	Minimum Operational Performance Standards
NAS	National Airspace System
PPS	Precise Positioning Service
RAIM	Receiver Autonomous Integrity Monitoring
RNP	Required Navigation Performance
SA	selective availability
SCAT	Special CAT
SOIT	Satellite Operational Implementation Team
SPS	Standard Positioning Service
TSO	Technical Standard Order
VHF	very high frequency
VOR/DME	very high frequency omnidirectional range/distance measuring equipment
WDGPS	Wide-Area Differential GPS
WAAS	Wide-Area Augmentation System

Mr. INHOFE. Are you satisfied with the progress that is being made in our GPS development?

Mr. POZESKY. I am more than satisfied, Mr. Inhofe. I think that in my 20 plus years with the FAA, I have never seen anything move this quickly. It has moved very, very rapidly, and I am even personally flabbergasted at how quickly.

It is embraced by the user community; the technology is there. We now have in place procedures which allow GPS to be used for supplemental use for en route or terminal navigation anywhere in the country. Nonprecision approach is also authorized. We actually had those procedures in place before there was hardware and equipment available on the market.

Mr. INHOFE. That is good and it is gratifying to hear because Pete Geren and I are the only two Members of Congress who are on both the Armed Services and Public Works and Transportation, and I am in the process right now of trying to get heavier use of GPS technology in our Armed Services in our defense system, and the problem that we have is that the technology is moving so fast and generally government is moving so slow that by the time you get something approved, it is obsolete, and if it is not obsolete, it is one-fourth the price it was when you started in on the process. Of course, that is Defense's problem, not ours, but I think we want to keep moving, and I would appreciate any information you can send to our office on that.

Mr. INHOFE. Mr. Administrator, since I am on both of these committees, we have been very interested and have been fighting the battle of joint use now for a long time.

You mentioned the military airports, and apparently there are 12. Do you have a breakdown as to which of those are civilian use of military airports as opposed to joint use?

I haven't seen the list of the 12 yet, that is why I was——

Mr. HINSON. I believe the 12 we are referring to now are base closures where we are providing funding for the transition from military to civil use only. There may be others that are joint use. In fact, there are. We will provide you a complete list right away of both of those.

Mr. INHOFE. That would be good. We had a problem. As you know, the military holds on to those with white knuckles and doesn't like to let go of them.

[The following was received from the FAA:]

MILITARY AIRPORT PROGRAM (MAP)

Airports Designated to Receive MAP Funds

AIRPORT/LOCATION	MAP SELECTION DATE	AIRPORT ROLE	MAP FUNDS ($ MILLIONS)
STEWART INTERNATIONAL Newburgh, NY /4/6/7/8	05-30-91	PRIMARY	12.0
ELLINGTON FIELD Houston, TX /4/5	07-03-91	PRIMARY	9.5
SCOTT AFB Belleville, IL *	09-19-91	RELIEVER	15.0
ALBUQUERQUE INT'L Albuquerque, NM	09-20-91	PRIMARY	9.2
AGANA INT'L AIR TERMINAL Tamuning, Guam /3 *	09-23-91	PRIMARY	14.1
MANCHESTER MUNICIPAL Manchester, NH	09-24-91	PRIMARY	9.7
MYRTLE BEACH JETPORT Myrtle Beach, SC /2 **	09-25-91	PRIMARY	9.0
LINCOLN MUNICIPAL Lincoln, NE /4/5	08-26-92	PRIMARY	9.0
PEASE INTERNATIONAL TRADEPORT Portsmouth, NH /1/4	09-20-93	COMM/RELIEVER	3.0
LAREDO INTERNATIONAL AIRPORT Laredo, TX	09-20-93	PRIMARY	2.7
SAN BERNARDINO INT'L AIRPORT (Norton AFB) San Bernardino, CA /1	09-20-93	RELIEVER	0
SMYRNA AIRPORT Smyrna, TN /5	09-20-93	RELIEVER	2.5
		TO DATE TOTAL	95.7

/1 - 1988 base closure list /4 - Air National Guard tenant /7 - Army Reserve tenant
/2 - 1991 base closure list /5 - Army National Guard tenant /8 - Marine Corps tenant
/3 - 1993 base closure list /6 - Army tenant

* Joint Use
** Joint Use when selected for the MAP; AFB closed in March 1993
Note: Albuquerque International is a commingled airport with Kirtland AFB.

MAP 5/26/94

DESIGNATED MILITARY AIRPORT PROGRAM LOCATIONS

LOCATION	BASE/AIRPORT
AGANA, GUAM	AGANA INTERNATIONAL AIR TERMINAL
ALBUQUERQUE, NM	ALBUQUERQUE INTERNATIONAL
BELLEVILLE, IL	SCOTT AIR FORCE BASE
HOUSTON, TX	ELLINGTON FIELD
LAREDO, TX	LAREDO INTERNATIONAL
LINCOLN, NB	LINCOLN MUNICIPAL
MANCHESTER, NH	MANCHESTER MUNICIPAL
MYRTLE BEACH, SC	MYRTLE BEACH JETPORT
NEWBURGH, NY	STEWART INTERNATIONAL
PORTSMOUTH, NH	PEASE TRADEPORT
SAN BERNARDINO, CA	NORTON AIR FORCE BASE
SMYRNA, TN	SMYRNA AIRPORT

JOINT USE AIRFIELDS

AIR FORCE	ARMY	NAVY	MARINE CORPS
AF PLANT 42, PALMDALE, CA	LIBBY AAF (FT. HUACHUCA) SIERRA VISTA, AZ	ALF FORD ISLAND HONOLULU, HI	MCAS YUMA, AZ
BARTER ISLAND DEW SITE, AK	DILLINGHAM AAF, WAIALUA, HI	NAS BERMUDA (To Close 1995)	
CHARLESTON AFB, SC	SHERMAN AAF (FT. LEAVENWORTH), KS	NAS AGANA, GUAM (1993 Closure List)	
EGLIN AFB VALPARAISO, FL	GRAYLING AAF (CAMP GRAYLING), MI		
PT. LAY DEW SITE, AK	BLACKSTONE AAF (FT. PICKETT), VA		
RICKENBACKER ANGB COLUMBUS, OH (1991 Closure List)	SPARTA/McCOY AAF (FT. McCOY), WI		
SCOTT AFB BELLEVILLE, IL			
SHEPPARD AFB WICHITA FALLS, TX			
WESTOVER AFB CHICOPEE, MA			

DEFINITION OF JOINT USE: An installation where written agreement between the military department and a local government agency authorizes use of the military runways for a public airport.

PENDING JOINT USE AGREEMENTS: Biggs AAF (Ft. Bliss) El Paso, TX, Phillips AAF (Aberdeen Proving Ground) MD, NAS Memphis, TN (1993 Closure List).

NOTE: There is commercial airline service authorized by permit/lease at Forney AAF (Ft. Leonard Wood) MO, Polk AAF (Ft. Polk), LA, Camp Guernsey, WY, and Eareckson AFB (Shemya Island), AK.

MAP 5/19/94

Mr. INHOFE. The last area I would like to just hear a comment on, this is long before you came on the job, and since Mr. Huff is not in the room here, I can say this.

With the PFC program, there has been a problem in a lot of areas, including my area in Oklahoma, where the people who are the users of airports don't feel that there has been adequate hearings prior to the approval of the PFCs that are being charged, and we looked into it and found that they were complying to the letter but maybe not the intent of what we were trying to do in the PFC program.

I mentioned that last year, and they said that the FAA was going to encourage in an informal way the airports to have as much as they can have in terms of hearings and public input and user input on the PFC program.

In your testimony, you said $9.3 billion has been approved. Can any of the three of you tell me whether or not we are getting more cooperation and more public input as a result of your encouraging them to do it or maybe we should look at changing the rules so that they will be forced to do it?

Mr. HINSON. We, of course, have modified to some degree the processes for determining the adequacy and propriety of PFCs since they were authorized by Congress, and I think that will probably be an ongoing process as we learn more and more.

However, until you mentioned it this morning, Congressman, I had not heard from anybody that the public didn't think they were getting a hearing, and of course we want to make sure the public does get a hearing, so let me ask Ms. Rich, who is here with me, if she knows and can expand upon that.

Ms. RICH. Congressman, I basically am in the same situation, as to public hearings and input. I do know that, based upon the review that FAA has done of the PFC program since its initiation, there has certainly been more review and withdrawals of projects from airports.

I can provide you later today the exact dollar amounts, but certainly there have been improved communication and requirements for justification of projects that had not originally been anticipated. There have been some projects that have been disapproved by the FAA, as well as others that have been withdrawn during the application process, and we will certainly look into our requirements for public input and greater communication and justification.

Mr. INHOFE. I am not asking to be provided with anything, I don't really need it, but as I recall there is a requirement for at least one, I think it says one hearing to be advertised, and anyway, some of the places I find they advertise in some obscure journal and people don't really know about it. All of a sudden, they are hit with a PFC when a lot of our heavy users really were opposed to it and had some legitimate arguments against it, and my request had been made last year, but you weren't here at the time, of course. That was a very informal request, and they said, in the words they used, encourage the airports to increase the public notification, hearings, and all that.

Mr. HINSON. We will do just that.

Mr. INHOFE. Okay. Thank you very much.

Mr. BORSKI. The Chair thanks the gentleman.

The gentleman from California, Mr. Filner.

Mr. FILNER. I just wanted to follow up on one point that Mr. Inhofe brought up, and since I am new and not aware of the context, I am not sure whether I am supporting him or not, but I hope so, and that is the relationship between the military airports and our civilian.

It seems to me, and you only devoted a couple sentences in your testimony, that given the funding problems, given our infrastructure needs, there is great, as you point out in your testimony, capacity in the military bases. And is there a policy that the FAA has or the administration has to work with BRAC to coordinate those needs on the one hand and the possible closures on the other hand? Is there a working together or do you have input into that process? Are the needs of a community in terms of civilian airports a factor in the closings at all and should they be, should that input be introduced?

Mr. HINSON. Congressman, with respect to closing of military facilities and the Base Closing Commission, I am not knowledgeable about whether or not the communities' needs in the event the base wasn't an air field for the Army or the Navy or the Air Force, whether there is a requirement that the Base Closing Commission review aviation capacity requirements for that community. I just don't know the answer to that.

However, there have been a number of aviation facilities closed, and earlier this year I represented the Secretary and the President in handing over San Bernardino Norton Air Force Base to that community. That has been for years a major military aviation facility that is very large and has a substantial investment.

The five-county area surrounding Norton formed an association or regional association to manage that facility. We had a big ceremony out there, and we basically handed them the title to the property.

Now, there is enacted legislation where the FAA is required to participate financially in transitioning that airport from a military to a civil airport, and specifically with respect to air traffic, the tower and so forth, and we are doing that, and we are doing that at 12 airports that have been closed by the military.

Mr. FILNER. I understand that is a post-BRAC decision.

What I guess disturbs me or intrigues me is here we have one arm of the government doing one thing, you have another arm of the government, the same government I take it, with other needs, and there doesn't seem to be any coordination of that.

As you know, I am from the San Diego area. There are discussions, and I haven't taken a position on it, concerning Miramar Naval Air Station being used as a civilian airport, and you know how difficult the situation is with Lindbergh Field. Does the FAA—should the FAA, I guess I am asking, have some input into that process to say, hey, San Diego or whatever—I just happen to know San Diego, but there are probably dozens of other communities in the same situation—has these needs. We don't want to—we just think the BRAC ought to have this input, not that that is going to determine it or anything else, but there ought to be some coordination of the civilian airport needs on one hand and the closing of military bases on the other.

There are just lots of fears of communities on closing of bases, as we all know. It seems to me the FAA might help these discussions by providing some general framework in figuring out the economic trade-offs.

Sure, a community loses this payroll and this economic input, but on the other hand the economic potential of a new airport may be even more economically beneficial, and those kinds of analyses, it seems to me, would be very useful for communities and to help this national discussion, which is just based on fear and not wanting to do anything. I wish FAA or the administration, in general, would get in to coordinate that kind of process.

Mr. HINSON. I think your logic is persuasive, and on the assumption that we are not doing that now, let us look into that and see what would be required and how we could influence those decisions. I think you have made a good suggestion.

Mr. FILNER. It is controversial.

There was a letter from someone of your FAA, somewhere in the hierarchy, wrote a letter to somebody in San Diego suggesting that Miramar would be better than Lindbergh and caused some uproar, so it is not clear. But I wish there would be some coordination, and I would be interested.

I will have to learn more about what the Ranking Member has done in the past. It sounds as if he is very involved in this issue, and I would like to learn from him.

Mr. INHOFE. If the gentleman would yield for just a moment, I would just share with him that we went through a lot of anguish involving parties, including the DOD and DOT, putting together those areas where they thought we could make use of joint use. Well, in the current administration, and starting with the last administration with the military rollback and then the BRAC committee working, we then asked them if they would coordinate their work with the BRAC committee for that express purpose.

But I am glad you brought it up because I haven't heard whether anything like that has been taking place.

Mr. FILNER. It sounds as if it has not, but I think we ought to follow your lead and look into that more. Thank you. Thank you, Mr. Chairman.

Mr. BORSKI. The Chair thanks the gentleman. The gentleman from Wisconsin, Mr. Barca.

Mr. BARCA. Thank you, Mr. Chairman.

I would like to welcome the people who are here today from the FAA. First, I want to thank your agency. Recently we had a situation involved in Wisconsin where we needed to transfer some equipment from the Kenosha Airport to the Racine Airport. Your field staff there was just extremely helpful in helping to make that happen, and so I just want to let you know how much we appreciated the efforts of the FAA in that regard.

Mr. HINSON. Thank you.

Mr. BARCA. Second, I wanted to ask along the lines of what the Chairman had said in his opening statement about making sure that we are attuned to the needs of ground transport at the various airports, and in particular what my concern is is the idea of having intermodal connectors between airports.

For instance, between O'Hare field and Mitchell field there is not really much of a connection point other than obviously the commuter planes that go back and forth, and there have been some groups that have been analyzing the notion of connecting with a high-speed rail transport between those airports, and as I am sure you are aware, they have looked at the notion of building a third airport in Chicago and they have not been able to get any support from the Illinois General Assembly in terms of trying to find a good location.

But one potential solution, at least to help alleviate some of the traffic, we believe, is to have some sort of a high-speed rail or at least some sort of adequate rail connection between those two airports, and I guess I am wondering if you have begun to look at that at all either for our region and the State or just more broadly speaking what role the FAA plays in terms of that ground transport decision-making.

Mr. HINSON. Yes, Congressman, the FAA historically and at the present time does not specifically address the questions of ground transportation beyond the airport. However, my boss does. The Secretary of Transportation is very interested in the intermodal issue that you raised, and in fact has, as part of his new initiative on creating the NTS, or the National Transportation System, made intermodalism a very important part of the work that they are doing. Of course, along with the other disciplines in DOT, the FAA is a participant, so we are collaterally involved at the level of the Secretary in talking about the issues that you are discussing.

Historically, the FAA has pretty well restricted its activities, particularly with respect to AIP and PFC funding, to the airport itself, but as time goes on we are more critically looking at the relationships that exist in capacity as they relate to being able to get people to and from the airport. So while the FAA has not directly addressed your question, we are associated with the rest of the Department of Transportation, and they are actively looking at that question.

Mr. BARCA. I guess, you know, the context in which I look at this is that, especially in urban areas, and I would imagine there are other regions of the country that are similarly situated where you have a number of airports within a fairly close proximity, and as you look at the air transportation needs of our country and when you look at certain urban areas, it seems to me that as a broad policy matter our real goal is trying to move people efficiently and cost-effectively from one area to another, and it seems to me that whether that occurs through train or through air services or whatever mode of transportation we might be using, but it seems we should just look at this from a broad spectrum.

I would just encourage the FAA to perhaps begin to devote more time to this issue as we look not just for moving people from an urban area to an airport but perhaps from airport to airport as well because I am sure that as you look at some of the congestion that we are experiencing in certain urban areas, some of the major airports, it seems like that may potentially—there may be a viable way to ease some of the congestion at least.

Mr. HINSON. Your point is well made and we are doing that exactly with the NTS, the National Transportation System.

The FAA now is actively involved with the other modes of transportation that the Secretary directs—rail, rapid transit, highways and so forth—and we meet regularly and talk about the exact questions you are discussing.

Mr. BARCA. You mentioned, I missed the forum that you said, that the Secretary created a commission to look at this—or what is the vehicle for accomplishing this?

Mr. HINSON. The strategic plan of the Department of Transportation is basically encapsulated in an initiative called the NTS, or National Transportation System, and it is comprised of all of the modes of transportation under the Secretary's purview, and clearly FAA is part of that, so we are all discussing in a formal way with objectives and deadlines the questions of intermodalism, airport to downtown, downtown to downtown, rapid transit and so forth.

Mr. BARCA. Do you know if there is somebody within the Department of Transportation that is really playing a lead role in helping to facilitate this? Do you know who that person is?

Mr. HINSON. Yes, sir, the Secretary clearly is. Why don't I provide you with all the documentation and a contact in the Secretary's office, and also one in the FAA's office.

Mr. BARCA. Thank you. That would be very helpful. Thank you, Mr. Chairman.

[The information received from Mr. Hinson follows:]

U.S. Department of
Transportation

News:

Office of the Assistant Secretary for Public Affairs
Washington, D.C. 20590

Contact: Richard Mintz
Tele: (202) 366-4570

REMARKS PREPARED FOR DELIVERY
SECRETARY OF TRANSPORTATION FEDERICO PEÑA
NATIONAL TRANSPORTATION SYSTEM PRESENTATION
WASHINGTON, D.C.
DECEMBER 9, 1993

I hope you're all as impressed as I am with the amazing capacity of the Geographic Information System that Rodney was using.

It is a fitting symbol of the role that new technology will play in future transportation planning. And G.I.S. will become an even more powerful tool in coming years as we plug in new data on traffic flows and interconnections between transportation modes.

As pleased as we are with what we've achieved in drafting the National Highway System, it is important to begin right now -- today -- to take an even wider view of America's transportation future.

Our country faces a world of growing economic integration, and intense global competition. Many of the markets we must compete in are far beyond our boundaries, beyond our National Highway System, across oceans, all over the world.

Our success in passing the North American Free Trade Agreement, our current push to secure a new General Agreement on Tariffs and Trade, our efforts to bring down trade barriers and open markets in Asia, Latin America, the developing world and the former communist bloc -- all of these point us to further tranportation challenges we must plan to meet.

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Seen in that context, the National Highway System is really, a first step beyond the Interstate highway era towards an investment strategy for all of America's transportation systems -- not just roads, but air and waterways, ports, pipelines, rail and urban transit.

It is important to say "first" step, because even though there are many intermodal links in this National Highway System map, it is not a fully-integrated national transportation system -- nor was it intended to be.

The NHS is, instead, a milestone -- and a firm foundation -- for the creation of a true National Transportation System -- a system which we are launching work on here today.

Why we need an NTS

Let me tell you why we need to start work toward that more comprehensive system.

One reason, as Congress recognized in ISTEA itself, is that we need to move beyond the often distorted lens through which we have planned and built transportation systems and infrastructure in the past.

All too often, America's transportation investment decisions have been influenced more by the availability of funds for one type of transportation or another -- rather than on a balanced analysis of real consumer needs.

We have sometimes pitted highways against transit or trucks against rail -- instead of realizing the need to integrate all of our transportation systems toward the common goal of moving people and goods as efficiently, safely and conveniently as possible.

This has been true at federal, state, and local levels. Examples abound across the country of under-and-over capacity in transportation systems; failure to connect highways to rail, or rail to ports, or transit to airports.

These flaws and gaps are not the result of "The System." They are the result of our lack of a true system -- our reliance instead on a patchwork of disconnected, sometimes competing "systems."

Even at the Department of Transportation, where we have maps of our rail systems, maps of our roads, maps of airports and airways, maps of barge channels, maps of shipping lanes and ports, maps of pipelines, we have no map -- none at all -- that shows how these various sub-systems link and interact -- or fail to do so.

Without such a "map" to guide our overall analyses, we cannot fully understand the capacities and limits of our existing systems; we can't convincingly explain to the American people the need for greater transportation investment; and we can't invest as wisely as we must.

It is now time to challenge the way we have thought about transportation planning and investments in the past. You all know that the first question asked was, "How can we extend or widen a road?" or, "How can we add a new subway?" or "How can we have a light rail system like other communities?"

By framing transportation questions this way we have lost sight of what our investments are supposed to do: which is to serve people....people trying to get to work, or to get home for the holidays, people trying to get raw materials to their businesses and ship goods to their customers.

We need to get back to basics. The right questions in transportation should be: "How can we move people or goods from point A to point B and from point C to A -- regardless of the mode of transportation? How can we do this most cost-effectively, with the least congestion, while protecting our environment and enhancing safety? Finally, as we make these investments, how do we ensure that they interconnect with other transportation options in a seamless web that ties America together?"

The National Highway System you have just seen addresses some of these concerns -- particularly by emphasizing intermodal connections. But it was not intended to fully integrate the demands of nationally strategic elements of passenger travel and freight movement by air, rail, water, pipeline or transit.

We need that sort of broader, more inclusive planning tool -- in order to accurately analyze America's future transportation investment choices.

This approach to investment planning will enable us to better allocate limited state and federal transportation budgets -- as we must. It will help us maximize the efficient use of existing transportation systems. And it will enable us to assess the likely impacts of proposed investments on social, economic and environmental goals -- much more accurately than we can do now.

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A national system, -- embracing all methods of transportation -- will help us assess where we are, anticipate where we are going, choose wisely among our options, and make investments that get us to our destination.

That is why I am today calling for state and local governments, metropolitan planning organizations, private industry and interested citizens groups to begin considering the transportation issues that should be addressed in developing a comprehensive National Transportation System.

Over coming months, the DOT will be conducting extensive public hearings to develop the NTS and decide which systems and networks it should include.

Many of you in this room will play key roles in that process.

In our view, the NTS should incorporate the most significant elements of the nation's transportation systems -- including airports, ports, waterways, rail, intercity bus lines, pipelines and local transit systems. It should include systems moving both people and freight; and facilities owned by both private businesses and governments.

The NTS should clarify the interrelationships of all of these elements. By doing so, it will give us the clearest possible reading on the ways transportation contributes to America's international competitiveness and to our citizens' well-being.

The Benefits that NTS will bring

As tightly constrained budgets for transportation clash with our public's exploding demand for mobility, a significant benefit of developing a true, multi-modal National Transportation System will simply be to allow planners to study our nation's transportation system as a whole.

This is the key to making wiser choices and to clarifying our priorities.

Just as our space shuttle astronauts are even now focussing the lenses of the Hubble Telescope so that we can "see" to the edge of the universe -- the National Transportation System will enable us to focus our efforts -- to actually "see" better ways to serve America's commuters, travelers and shippers.

That's what we've done for roads with the National Highway System. But we need to extend our view to our whole transportation network. The stakes are huge.

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The United States spends nearly $1 trillion a year -- 17% of our gross domestic product -- on transportation services. That means that any gains we can register in system-wide efficiency will have large and rapid pay-offs.

A 1% improvement in the overall efficiency of America's transportation system, for example, would translate into nearly $100 billion in savings across our economy within a decade.

These sorts of gains are crucial in sustaining America's international competitiveness. By 1995, for example, more than half of our country's manufacturing plants will be using just-in-time inventory systems.

These systems depend critically on rapid delivery of parts -- often through several different means of transportation, from ship to rail to truck, for example. American manufacturers saved $14 billion by slimming their inventories in the 1980's.

Businesses' ability to sustain such gains and to carry on our nation's export surge depends, in part, on improving our transportation system's efficiency. So do their bottom lines. A corporation like General Motors, which spends roughly $2 billion a year on its own transportation needs could save $200 million in a decade from a 1% improvement in transportation efficiency.

Ironically, though, public investment in transportation infrastructure has been derided far too often as just another species of "political pork."

America's economic partners and rivals around the world do not suffer from that delusion.

Japan and other Asian governments will spend upwards of $1 trillion on infrastructure by century's end. European governments are spending even more -- $1.5 trillion -- on a continent-wide system of high-speed rail and motorways.

Infrastructure spending in both regions dwarfs any proposed in our country -- in part, because we have already built the foundations that others now emulate.

America's task today is largely to make our world-class transportation system even more efficient -- by introducing new technologies like Intelligent Vehicle Highway Systems, by investing in high-speed rail and by integrating transportation modes in innovative ways.

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But the truth is, we can only begin to realize these sorts of efficiencies by "seeing" the system as a whole -- something we have not been able to do at either the federal or local levels.

That is what the National Transportation System will enable us to do. It will focus our vision and disclose to us solutions we haven't even thought of -- just as the Hubble telescope will show us distant galaxies that have been invisible for eons.

While the NTS is a new initiative, it does have deep roots in our existing transportation policies. ISTEA itself called for the development of statewide and metropolitan planning processes to make integrated transportation investment decisions.

The NTS will enable state and local officials to do their own jobs better and to weigh issues of national significance as equal partners with their federal counterparts.

The NTS, in short, will bring America's transportation planning and investment decisions into the 21st Century -- at both federal and local levels.

I should very strongly emphasize, however, that the NTS does not imply any new emphasis on centralization of transportation decisions. Both in formulating the national system and in implementing future investment decisions suggested by it, the state, local and community input mandated by ISTEA will be required -- and welcome.

So will the involvement of the private sector. We welcome private businesses both in the planning of the NTS -- and as a partner in transportation development and investment.

Once in place, NTS will enable all transportation officials to do our jobs better.

Indeed, some state level planners already consider the multi-modal demands placed on transportation in their states. The State of New Jersey's submission to the National Highway System, for example, included passenger rail, transit rail, intermodal terminals and other transportation elements as well as highways.

The NTS will be a powerful analytic device -- not just a map of inter-linking transportation facilities. It will enable us to focus even more clearly on ways of enhancing people lives.

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It will make it easier to judge which city-to-city corridors can best benefit from high-speed rail investments. It will help us make better decisions on use of existing transportation facilities -- such as whether to add a new airport runway or whether to use highway funds, as we did at Union Station here in Washington, to support a parking facility at a rail terminal.

The NTS will also allow us to better assess how transportation investment choices impact the environment and our patterns of energy consumption. We will be better able to minimize pollution and wasteful fuel dependency. And the NTS will also allow us to plan better for emergency transportation needs -- like those we saw across the Great Plains states in the 1993 floods.

There are many other ways that the NTS will enable us to do a better job in serving America's transportation needs.

But if there is one reason above all for moving forward it is that for the first time in American history -- and for generations to come -- the NTS will enable us to see America's transportation system as a whole; to pinpoint our weaknesses and to correct them; to identify our strengths and to build on them.

The NTS won't only suggest to us answers to our current questions -- it will help us anticipate and answer new questions we haven't even asked.

There are many issues to be addressed and questions to be answered as we develop the NTS. That is why the DOT will be embarking on a massive, wide-ranging public contact effort involving citizens, public interest groups, state and local officials, private businesses and the Congress to help shape the NTS concept.

If you were to ask me today for answers many of the questions that will arise, I'd have to say frankly, "I don't know." We have made huge strides, as you have seen, with the National Highway System. Congress should move now expeditiously to approve the NHS System.

But for all of us involved in American transportation, the time has come to move on, to take the lessons we've learned in designing the National Highway System and apply them to all of our nation's transportation needs.

It is time to roll up our sleeves and start work on a National Transportation System that will realize the promise of ISTEA and strengthen America's awareness of and commitment to transportation investment.

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So I urge all of you to join us -- first in encouraging Congress to approve without delay the fine work that has gone into drafting today's National Highway System.

And I also urge you today to join the great work of drafting the National Transportation System -- the blue-print for America's 21st Century transportation needs.

# # # #

Mr. BORSKI. The Chair thanks the gentleman, and congratulates him on his line of questioning. It was very useful.

I would also like to just follow up, and mention that not just the movement of people but the movement of air cargo is also important, the intermodalism, as it connects. We appreciate your concern on that as well.

Mr. Administrator, the air cargo industry, as you know, operates primarily at night. What actions have you taken to ensure that these night operators have adequate air traffic control service?

Mr. HINSON. Well, we have always had adequate air traffic control service at night, and continue to do so. We are a 365-day-a-year, 24-hour-a-day business, and every air traffic control center is manned 24 hours a day and there are no limitations or prohibitions on operating anytime within the 24-hour spectrum.

Mr. BORSKI. In 1992, FAA predicted that unless capacity improvements were made, the number of airports that would exceed 20,000 hours of annual delay would grow from 23 to 40 by the year 2002. However, in 1993, FAA projected that only 33 airports would experience unacceptable delays in the same time period. What factors accounted for this revised projection?

Mr. HINSON. Well, I think there are two that really come to mind. One is I believe historically a forecast we used for passenger traffic growth and for airplane movement growth, when those statements were made originally, had forecast somewhere between a 6 and 6-and-a-half percent, or let me say a 5-and-a-half to 6-and-a-half, to be safe, rate of annual growth. That is now 4 percent, reflecting the more recent economic environment.

In addition to that, the NAS plan is now really beginning to impact the capacity of the system. Of 54,000 pieces of hardware that were envisioned by the original NAS plan, 47,000 are in place. Eighty-seven percent of the original NAS plan has been completed and is working, and last year, for example, the FAA put more than 600 new pieces of equipment into the air traffic control system in the United States. So we are increasing capacity, and we are growing at a slightly slower rate, and I think the combination of those events caused us to reforecast the delays from 40 down to 33 airports.

Mr. BORSKI. What are some examples of innovative financing mechanisms FAA is considering to encourage more capital investment from the private sector to enhance the transportation infrastructure?

Mr. HINSON. Perhaps I should start by putting the financing into this context: Of some $50 billion I estimate in investment over the past decade in the airport system in the United States, about 75 percent of that has been in the private sector, about 25 percent has been provided by AIP and partially PFCs—they are still new—so about three-quarters of the investment in the airports in the United States is already in the private sector.

The question, then, is one of leverage, that is to say, how can you take a known income stream provided by AIP or some other, or PFCs more specifically, because it is more determinative, and leverage that into financing?

We are looking at concepts of using a guaranteed income stream from PFCs as a way to fund bonds and to provide other types of financing. That, of course, gets into some other areas like what indentures would be required on the bonds, what the costs would be and so forth, and would Congress change their mind and stop PFCs in the middle of this process. There are just a number of issues that lenders have to consider before they put money into projects of this nature, but there are opportunities, we believe, and we are investigating fairly aggressively alternative financing concepts.

Mr. BORSKI. Mr. Hinson, you mentioned in your testimony the work that FAA is doing to make the global positioning system an operational part of the air traffic control system. Is FAA coordinating with other agencies such as the Coast Guard in the development of GPS so that the duplication of facilities is minimized?

Mr. HINSON. Yes. As a matter of fact, the Secretary has created in his office a person who is coordinating the development of GPS in the entire United States because, as you correctly point out, it is a technology that has application for automobiles, for trucks, for boats, for hikers, for airplanes or for anybody who wants to know where they are, simply stated.

The Secretary is very conscious of the desirability of not duplicating efforts. I mean, for instance, and Mr. Pozesky can talk to this in detail if you would like, but one of the questions we are discussing is what is the proper way for ensuring wide area augmentation, which is required for aviation because we need a failure analysis.

Another question is what kind of local differential should there be to get the accuracies needed not only for aviation but for ship navigation to make sure they know where the shoals and the rocks are, so you make a good point, and the Secretary is working on that.

Mr. BORSKI. Mr. Administrator, what would be the consequences of the failure to invest adequately in our aviation infrastructure?

Mr. HINSON. That sounds like a question for a quarterly course in economics at some university. Well, not to be glib, but I think there are a number of consequences.

First, if we don't have AIP or PFCs or some similar funding mechanism, then about 25 percent of the needed funds or the funds that are required for the future would have to be derived from other sources, and I think that would pose a number of consequences.

First, it would clearly slow down the rate at which we are able to make the improvements needed, and that would cause more problems because I believe the growth is going to resume very aggressively in the next decade or so.

The second thing it would do, is cause communities who have and manage airports to have to make hard choices on where their tax dollars go, and that would inevitably mean that they would not get as much as they would need because they are in competition.

Third, it would call into question the support, I think, of a number of the major financing institutions who have been willing to step up and work hard to support the airport financial infrastructure because they know that the Federal Government has an active program and is very interested in the improvement of the aviation infrastructure, so there sould be a number of collateral results.

Mr. BORSKI. The gentleman from Oklahoma, Mr. Inhofe.

Mr. INHOFE. Let me expand my request, Mr. Pozesky, if we could go any other status of avionics certification that might be in place and along with the automated, advanced automated system, the current status, that would be helpful, too, if we could have that information.

[The information received from FAA follows:]

Status of the Wide Area Augmentation System (WAAS)

In January of this year, the Secretary announced his intention to accelerate Global Positioning System (GPS) technology development and deployment, and directed the modal Administrators to investigate methods for achieving earlier benefits for transportation.

Prior to the Secretary's announcement, the Federal Aviation Administration (FAA) had been actively pursuing a Wide Area Augmentation System (WAAS) for the basic GPS services provided by the Department of Defense (DOD). Augmentation of GPS is necessary to support civil aviation because basic GPS services do not provide the requisite levels of integrity, signal availability, and accuracy to support flight operations in the National Airspace System (NAS) from en route through Category I precision approaches.

On May 16, the Transportation System Acquisition Review Council (TSARC) approved an accelerated schedule for the WAAS. To be fully consistent with the Department of Transportation (DOT)/DOD agreement concerning the civil use of GPS, the WAAS will be implemented in two phases. At the completion of phase one, operational benefits will be realized from en route through non-precision approach operations; phase two will add the requisite levels of accuracy to satisfy Category I precision approach requirements. On May 18, the FAA released a Commerce Business Daily announcement regarding a contract to obtain the necessary expertise to establish and maintain a WAAS. The Request for Proposals will be issued on or about June 1.

Once the WAAS services are available, benefits will include more direct user routing resulting in fuel savings, improved safety for non-precision approaches, and approach course guidance at airports nationwide. As users equip with GPS, the ground-based infrastructure will be reduced thereby avoiding expenditures for replacement systems and maintenance costs for those systems.

The following manufacturers have received Technical Standard Order (TSO) approval for GPS receivers and sensors (for en-route/terminal operations unless otherwise noted):

Bendix-King
Trimble Navigation
Litton Aeroproducts
Honeywell (approach capable)
Canadian-Marconi
Garmin International (approach capable)
II-Morrow
Universal Navigation Corp.

Approval for approach capable receivers are pending from:

Bendix-King
Trimble Navigation

Future Developments

In cooperation with RTCA Inc. the following standards are being developed (shown with projected dates for development of the standards):

Minimum Operation Performance Standards (MOPS) for Primary use of GPS	1Q95*
MOPS for Wide Area Augmentation System (WAAS) (Differential augmentation of GPS signal for CAT I approaches)	1Q95
MOPS for GPS augmented with Inertial Reference Systems and Loran C	CY95

* first quarter 1995

Mr. INHOFE. Mr. Administrator, in my opening remarks I expressed an interest in getting anything up to date on the administration's corporatization plan, and I was waiting until all the questions got asked to see if anything came out, and I didn't hear very much.

Is there anything that you can share with us now about that?

Mr. HINSON. Yes, sir. I can share with you that the oversight committee the Secretary instituted to evaluate and make recommendations on all of the various aspects of corporate structure for the air traffic control system, has completed its work.

The report is in its final stages. While I can't be perfectly specific, I believe the 4th of May is sort of a target date at the moment.

The Secretary will present his report. I am not certain what that format will be, whether it will be to the Vice President or whether it will be to the public, but there will be an event in the area of the 4th of May, and so we are at the conclusive point of six months of pretty hard work by a great many people and many disciplines, and I believe that when the aviation user community is apprised and made aware of the results that many of the concerns that have been expressed will be addressed. I am confident that this report will be greeted with warmness and open arms, and I can tell you it is an idea whose time has come and we need to get on with it.

Mr. INHOFE. Normally, when there is such an overhaul suggested as that, little bits and pieces come leaking out, and I haven't seen any little bits and pieces leaking out, and when you are operating without the information and are not able to get answers to questions, then you expect the worst.

I wrote an article that was published in the Roll Call newspaper last week and a lot of that is just on information that we have heard. So it may not be accurate at all, but whoever is handling that for you, you might ask them to read that article and if they could have anything in advance of the report coming out that might address some of those objections that I pointed out in the Roll Call article, I would like to have them.

Mr. HINSON. We will do that.

Mr. INHOFE. Thank you very much.

Mr. BORSKI. There being no further questions, we want to thank you very much, Mr. Administrator.

The needs of this committee to look at the future infrastructure needs in aviation have been well served by you today in your testimony today. We are most grateful. I understand you had another appointment you wanted to make, so we appreciate again very much your testimony.

Mr. HINSON. Thank you very much, Mr. Chairman, and members of your committee, for your courtesies.

Mr. BORSKI. Thank you, sir.

On our second panel we have Mr. Edward Merlis, Vice President for External Affairs, Air Transport Association of America; and Mr. John Olcott, President, National Business Aircraft Association.

Gentlemen, would you please rise and raise your right hand.

[Witnesses sworn.]

Mr. BORSKI. Mr. Merlis, if you would like to begin, sir.

TESTIMONIES OF EDWARD A. MERLIS, SENIOR VICE PRESIDENT, EXTERNAL AFFAIRS, AIR TRANSPORT ASSOCIATION OF AMERICA; AND JOHN OLCOTT, PRESIDENT, NATIONAL BUSINESS AIRCRAFT ASSOCIATION

Mr. MERLIS. Thank you, Mr. Chairman. I am Edward Merlis, Senior Vice President, External Affairs of the Air Transport Association.

ATA is the airline industry trade and service organization representing major U.S. airlines providing scheduled passenger and cargo service. We appreciate this opportunity to appear before you today to address the important topic of aviation infrastructure needs.

The Nation's air carriers truly believe that proper investment of funds into necessary capital improvements is essential to their ability to provide safe, efficient, and reliable service. At the same time, however, we are alarmed at the nonstop building that is occurring even as airlines are struggling both to stay afloat financially and to rethink some of the fundamental ways in which they do business.

We are also concerned that the goals of Federal aviation financing programs are subject to being thwarted by unceasing attempts of local government to raid the self-sustaining national aviation system to fund nonaviation budgetary shortfalls.

Today, the aviation system finds itself in the strange situation of being asked to pay a steep price for success—a success for the passenger and shipper which has unfortunately not inured to the benefit of either the employees or stockholders of airlines, an increasing number of whom are one and the same. And, frankly, without restoration of financial health, the substantial benefits which the public has derived from this system may be illusory in the future.

As you know, the aviation system is pretty much self-sustaining, funded through a combination of Federal funds paid into a trust fund by passengers, shippers, and other aviation users, locally assessed taxes in the form of passenger facility charges, and airport user fees in the form of landing fees and rental charges. Passengers and their well-wishers or meeters and greeters, also pay additionally in the form of parking, concessions, and other discretionary expenditures at airports, all of which, under Federal law, is supposed to be reinvested into the local airport or airport system.

The result is a national aviation system which is the envy of the world. Approximately 40 percent of all worldwide airline travel occurs in the United States. And while the highly competitive airline industry has been bludgeoned into massive losses of over $11.5 billion since 1990, airports continue their success as local economic engines, generating revenues which are becoming the target of envious local governments.

I would like to identify three prime examples of the price the aviation system is being asked to pay for providing such extensive benefits to the U.S. economy.

First, there is the belief that airline service will be provided, regardless of the realities of local economies. Hence, airport construction is perceived as good business, and good business it is—it creates jobs, even if they are temporary. The new Denver Airport, which is now supposed to open on May 15th, is an excellent exam-

ple of that phenomenon. DIA will be the second largest airport in Denver when it opens. It will have fewer gates, many of them not in use, and the same number of runways as Stapleton, although more concurrent landings will be possible. For this, the traveling and shipping public will be asked to pay $3.5 billion. Quite a high price to pay when less costly alternatives were available.

Second, and related to airport infrastructure for the national aviation system is the matter of local transportation infrastructure, which I know this committee is of course interested in. If airports serve as the engines of commerce for local communities, creating job opportunities and generating economic growth in those communities and thus bettering local living standards, we question whether it should be the sole responsibility of the traveler and shipper to pay for local transportation infrastructure, particularly when the traveler has paid virtually in full for the airport. Communities are seeking to place, we believe, a disproportionate burden on airport users for their local transportation needs.

Just look at New York City. There is a significant road congestion problem in New York City—severe, sometimes even paralyzing gridlock. Some of that traffic is, of course, attributable to traffic headed to or from the airports. But rather than come up with a region-wide, sensible solution to solve the larger problem, the Port Authority is planning a dedicated, 25-mile-long light rail system from Manhattan to Kennedy Airport, via LaGuardia.

This train, or different iterations of the same theme, has been proposed and dismissed numerous times in the past, but with the creation of the PFCs the Port Authority believes it can simply impose a 35-year, $6 billion tax on airport users, build the train, and saddle passengers with the total bill for a transportation project which many contend is not the proper solution to the road congestion problem which does exist at those airports.

In the process, PFC funding for over $2 billion in on-airport safety, capacity, security, and noise-related improvements for two of the most congested, noise-impacted airports in the country will be ignored.

Finally, both airports and airlines are faced with the ultimate challenge to their long-term financial viability, the politicizing of airport management in order to take money off of airports for nonaviation purposes. The spine-chilling situation in Los Angeles, if carried out elsewhere, has the potential of taking the premium air transportation system in the world and turning it into a shabby, second rate, high priced system, affordable to a select few.

Local officials in Los Angeles want the airport to pay general expenses of the city, rather than facing the reality that local taxes on the citizenry must be raised or the costs of government reduced. Increasing the cost of doing business in Los Angeles for the airlines and for passengers and shippers who use that airport by siphoning money off the airport constitutes a blatant disregard for what is a national aviation system which Congress has so carefully crafted. And the consequences of the activities in Los Angeles are national in scope.

There are a host of ways in which a local government and airport can conspire to divert revenue. Overcharging for city-provided services, accounting gimmicks and land sales are but a few. This last

one is particularly pernicious. In this scenario the local community, which contributed land for the establishment of an airport in order for the community to derive the economic benefits of aviation for the community now seeks to be paid from the airport's funds for the debt attributable to the donated land. The danger of this scheme should not go unchallenged by Congress.

The Aviation Trust Fund and the aviation programs which this committee oversees finance development which has fostered the economic growth and health in many local communities. The intent of the Airport and Airway Trust Fund was to place the primary burden of airport and airway development on the direct users of the system. If allowed to go unchecked, communities could reap the benefits of an aviation system financed by aviation users, double dip by diverting revenues generated by the airport into the community a second time, and ultimately turn our national aviation system into an inefficient, financially weakened, excessively costly and unfortunately balkanized array of airports.

We think the solution to these multiple problems is to address them head on. Aviation law already embodies the concept of "reasonable" airport rates and charges. It is required under the Anti-Head Tax Act.

In light of both the monopoly position occupied by most airports in this country and the critical contribution of each airport to the national aviation system, Congress recognized the importance of controlling airport rates and charges. But existing law does not spell out nor does it clearly specify the extent to which airports can build up surpluses or define the concept of "reasonableness" with any degree of specificity. .

By limiting the extent to which airports can build up surpluses, imposing sanctions on the diversion of revenues out of the aviation system, and providing for expeditious, efficient, and low-cost relief when violations occur, the Congress can remedy this deficiency in Federal law, particularly at a time when practices going on today threaten the system which this subcommittee is investigating.

Mr. Chairman, you asked that we address overall aviation infrastructure needs, particularly in light of estimates which we have all seen ranging into the scores of billions of dollars. You referred to them yourself this morning.

A comprehensive document known as the National Plan of Integrated Airport Systems, the NPIAS, cannot keep pace with either the changes in the ways in which carriers provide their services or the wants and needs of the customers. It is unfortunate, but that happens to be the case.

What we really need is an effective system of checks and balances between the airports and the airlines. No single party should have unilateral authority to commit dollars to large projects, especially if the other party is paying the bulk of the costs. If we need a Pontiac, let's not buy a Cadillac.

Given the proliferation of Passenger Facility Charges, which now provide over $9.2 billion to airports for capital improvements, with another $1.9 billion pending down at FAA, we believe that AIP funding levels in the range of $1.75 to $2 billion per year are adequate. Increasing the AIP program would not be fiscally responsible, considering all the other budgetary priorities.

However, the program should not be cut, either. The simple reason for this is that airports are a part of this national system, and as such must remain under some measure of control. Maintenance of the AIP program at this level will allow FAA to offer meaningful dollars to airports, while at the same time ensuring that airport managers and those to whom the airport managers report remain in compliance with the requirements which come along with the Federal grants.

To provide higher AIP levels would strain the Federal budget, although there are some who would disagree with that, and to provide less would weaken the control Congress and the administration must maintain in order to ensure that this national system remains national.

Between set-asides, regional allocations, airport projects and airway funding, there is a severe disconnect between the funds Congress makes available through the authorization and appropriations process and meeting actual system needs.

Let's look at the airport side first. There was a reference in the question to Administrator Hinson about this. FAA does not allocate its discretionary AIP dollars on a national system basis. Monies are allocated according to indicia such as size, number of airports, operations, but the most important factor of all, need, in the regions vis-a-vis the national system, is absent from the evaluation.

The net result of this regionally balanced approach to AIP funding is that we have a nationally unbalanced system. High-traffic airports in critical locations with important capacity or safety projects may find themselves without funds while airports in other locations which are promoting lower priority projects may be awash in money. The fact is the FAA's allocation of funds forces some regional administrators to spend AIP dollars on low priority projects or lose them.

We recommend that procedures for allocation of discretionary AIP funds be established which reflect regional operational levels or some other indicator of need that would result in the distribution of AIP money to projects that have been prioritized on the national system-wide basis.

Another problem exists with respect to the allocation of funds, time, effort, and attention between airports and airways. More focus is directed at airport remedies to the congestion problem than airways remedies. We don't know whether this is because it is easier to identify airport projects or it is easier to complete airport projects than airways system projects.

Unfortunately, the fundamental problem with congestion is the airways system, not airport congestion. As can be seen from Exhibit 2 in my testimony, a chart which quantifies aircraft operating costs attributable to delays by phase of flight. Eighty percent of the aircraft operating costs of delays are in the taxi out and airborne phases of delay, which are susceptible to airways remedies, not airport remedies.

In only a few places in the entire country can delays be remedied by airport construction. Yet the myth persists that massive Federal airport funding is necessary to reduce delays.

Mr. Chairman, if there were a way environmentally, politically or physically to build additional airport capacity at LaGuardia,

Kennedy or O'Hare, just to name three, I don't think the Federal Government would have to finance one penny of it. The airlines would line up to pay every penny of that.

The Letter of Intent program is another area I would like to address. The FAA's Letter of Intent program has run amuck, in our belief, and we think GAO's findings support that view. At the current funding level, over 70 percent of the discretionary dollars are already dedicated to 49 airports under the LOI program. While many of the projects under LOI commitment have airline support, so too do projects at other airports which will not receive any AIP money because of this poor advance planning on FAA's part.

The General Accounting Office earlier this year released a study of the program and made three recommendations for improving the management of that program. We fully concur with the GAO recommendations and are looking forward to working with FAA on the implementation of the forthcoming LOI policy statement which will bring greater controls and tighter eligibility to the program.

I must say I was heartened to hear that Administrator Hinson expects that to be out within 60 days.

Mr. Chairman, you requested that we specifically comment on how the Passenger Facility Charge program has contributed to meeting aviation infrastructure needs.

We believe that the Passenger Facility Charge program can be a useful tool, provided that the program is not abused. There are many examples of airports which seek to build "field of dreams" projects which may make good local political sense but do not make good airline operations sense nor do they enhance the national system.

The previously mentioned New York train is the most prominent example. So, too, is a proposed $130 million plus international terminal at Baltimore. Baltimore has less than 1,000 international passengers a day. For less than $10 million that airport's international facilitation activities can be improved, yet a $130 million PFC has been approved.

FAA has been somewhat responsive to airline criticisms of specific projects, but we continue to believe that there is unnecessarily absent from the statute a precise congressional direction that all PFC projects must have a clear aviation-related need in order to be approved.

It is important to note that of the $9.2 billion authorized for PFC collections, only $1.2 billion, or 13 percent of the total, has been earmarked for airside projects such as runways, taxiways, aprons and lighting, projects that reduce delays and cut costs. The other 87 percent is earmarked for things which though valuable and many are needed, few have a direct bearing on the largest infrastructure related problem, airside congestion and delays. Thus, the PFC program has not been a panacea for congestion.

For more than 10 years, the FAA has been engaged in the modernization program which was discussed earlier, the NAS plan and now the Capital Improvement program. As the airlines struggle to return to profitability, the key, we believe, to fulfilling this goal is better utilization of equipment and flight crews. The more time spent suffering through delays, the more must be spent on equipment, crews and fuel. Unless we see significant improvements in

the air traffic control system, the number of delays is sure to grow as air travel grows in the years ahead.

The AAS debacle represents but one example of the flaws in what we believe is the structure of the FAA's procurement, personnel and budgeting programs. The administration has promised a plan for establishing a new Federal corporation to run the air traffic control system. While the devil is in the details, we look forward to this plan with great anticipation. Surely, there is little likelihood that a new system which benefits from experience will be any more costly or inefficient than the existing system.

Reform of the system through the creation of a government controlled corporation, just as reform of the airport rates and charges dilemma, holds, we believe, the greatest promise for insuring that our national air transportation system will flourish. And the irony is both changes would result in greater efficiency and a higher margin of safety, with commensurate benefits for the economy, and we believe no additional government spending.

Mr. Chairman, I apologize for taking more than my allotted time. I would be pleased to respond to any questions which the subcommittee has. Thank you.

Mr. BORSKI. We will now hear from Mr. Olcott.

Mr. OLCOTT. Thank you, Mr. Chairman, members of the subcommittee. I am Jack Olcott, President of the National Business Aircraft Association. I appear before you today on behalf of our more than 3,300 member companies which own and operate general aviation aircraft as an aid to the conduct of their business or are involved with business aviation. NBAA appreciates the opportunity to present our association's views concerning the aviation infrastructure needs and specifically the needs of the business aviation community in this regard.

Before proceeding, I would respectfully request that two publications be placed in the record of this hearing at this point—NBAA's Issues '94, a document which details our association's legislative and regulatory agenda for the year; and, secondly, a brochure associated with our No Plane, No Gain advocacy program, initiated by NBAA and the General Aviation Manufacturers Association.

Our agenda relates in part to the focus of the subcommittee's current considerations and the advocacy program is designed to increase the awareness of the value of business aviation to our Nation's economy and the role that business aviation plays in our Nation's transportation system. We believe that if business aviation is fully understood those who are responsible for enhancing our Nation's transportation system, including this subcommittee, will have a clearer basis from which to make important and relevant decisions.

Aviation is vital to the viability and growth of our Nation's transportation system, and thus to our Nation's economy. Investments in the infrastructure that support aviation have a significant economic impact either directly or indirectly on all citizens of our Nation. If that investment is inadequate to meet the air transportation needs of our Nation, the economy and society will, in general suffer.

NBAA member companies are acutely aware of this relationship between transportation and economic growth. They are significant

contributors to our Nation's economy providing over 16 million jobs worldwide and generating annual revenues in excess of $3 trillion. To put that number in perspective, the gross national product of our Nation is about $6 trillion.

Airports and the air traffic control system are the basic components of our aviation infrastructure. Future growth and demand for air transportation will require an adequate system of airports of all sizes and types as well as airways and the advanced technology to manage those airways.

With regard to airports. AIP funding, Airport Improvement program funding, reliever airports, runways, landside development and environmental protection rules and regulations are areas of specific interest to NBAA members.

As you know, the airline/airport fee dispute, which is basically in response to the Supreme Court's decision on Kent County, has affected the reauthorization process considerably. First, NBAA appreciates the concerns of the airlines relative to the fees they are charged, but we agree with the Supreme Court that the proper venue for fee dispute resolution is the Office of the Secretary of Transportation.

Secondly, and more to the point of today's hearing, the association is seriously concerned with the impact of this situation on funding for reliever and smaller airports. We are concerned with the administration's proposal to reduce set-asides for reliever airports which officials at the Department of Transportation say will be balanced out, to some degree, by additional funds made available for this purpose through the passenger facilitation charges.

Rather than debate that point right now, it seems to us that there will be a reduction in the area of funding for reliever airports. This concern, combined with the Congressional Budget Office report discounting the value of reliever airports, a position we disagree with strongly, causes NBAA to be concerned about future funding for smaller airports which are so important to our Nation's air transportation system.

We feel that this attitude towards our smaller airports reflects limited, if any, recognition at the highest levels of government for the important role of small reliever airports in our air transportation system. These types of airports actually have proven to be effective elements of aviation complexes and effective elements at reducing the impact of general aviation on congestion at major hub airports.

I would like to submit for the record a chart that was not available when we submitted our written testimony. It is a pie chart depicting the basing of general aviation aircraft at major airports throughout the country, and I draw to the subcommittee's attention the statement by the FAA that general aviation activity at U.S. airports is directly proportional to the percentage of general aviation aircraft based at those airports.

In particular, at the 29 major hub airports in this country, basing of general aviation aircraft is at the 1.4 percent level. Using the FAA's statement, that suggests that usage of general aviation aircraft at major hub airports is not a significant factor in congestion at those airports. It suggests that the reliever airport system has

worked by taking aircraft away from those major hubs and diverting them to reliever airports.

NBAA strongly recommends that landside development programs be limited to projects within the curbside of airport facilities and preferably to the edge of the tarmac.

Finally, it is important for this subcommittee to understand the impact the Environmental Protection Agency (EPA) has on airports and infrastructure. As detailed in our written testimony and stated in NBAA's Issues '94, we are concerned by the restrictions on aircraft emissions that are being imposed or considered at the Federal and State level. NBAA asserts that these regulations must achieve a balance between preservation of the environment and the ability of the aviation community to effectively utilize the national air transportation system.

With regard to the ATC system, we believe appropriate investment in the aviation infrastructure can result in more efficiencies and more capacity within the existing structure. The National Noise Policy and the positive effect it has had on the capacity of the system must be preserved. And, funding for many valuable research, engineering and development projects related to the FAA and to the National Aeronautics and Space Administration, including noise technology research, should be maintained at the highest levels.

Specifically, NBAA believes FAA should proceed with the Advanced Automation System, despite the cost overruns that have been highlighted recently because we feel FAA and its leadership have responded and are responding appropriately to this situation.

NBAA strongly supports rapid transition to the Global Positioning Satellite system, but urges continued utilization of ILS technology as GPS is phased in. We also caution against premature phaseout of Loran C. Indeed, Loran C may provide backup as our Nation transitions to a navigational system based upon GPS. We feel that funding for MLS should be eliminated.

In order for the aviation infrastructure to provide the support required by our national transportation system, it must be managed effectively. Thus, to the extent that this subcommittee affects initiatives to reform the Federal Aviation Administration, we believe it is important to familiarize you with NBAA's views on corporatization, a proposal that has been promoted by the administration and viewed by some as a panacea for procurement, personnel, and budget and funding reform.

Although the NBAA welcomes the new opportunity that has evolved during the past few years to reform the FAA and our Nation's aviation system in these three areas of procurement, personnel and budgeting, we have serious doubts about the corporatization concept.

NBAA has recommended that FAA reform occur. We have recommended this consistently for many years. We believe that this reform can be achieved through a well-conceived program for change within the existing managerial structure.

Furthermore, how and why the Clinton administration's National Performance Review determined that changing the culture of government service and improving the government within existing structures; namely, the reinventing government concept; would

work for the entire government with the exception of the FAA, is beyond us. We feel the National Performance Review has some very good ideas. We would like to see them performed within the FAA.

With regard to the funding for infrastructure in general, NBAA is on record supporting multiyear funding for all FAA programs so as to establish a level of certainty as this country endeavors to modernize and enhance the capability of our air transportation system.

Mr. Chairman, if you would like, I will try to truncate my oral comments. I would like to conclude, if I may.

The most important consideration for this subcommittee and the entire aviation community is to ensure access to the air transportation system and the aviation infrastructure.

This month NBAA will be submitting comments to the FAA which is exploring the viability of the high-density rule and the experience the aviation community has had with high-density rule airports. We encourage this subcommittee to provide funds to ensure fair and equal access to these airport facilities as well as to the entire national system of airports and navigable airspace.

NBAA views system access as paramount in most, if not all, issues on the association's 1994 legislative and regulatory agenda. To ensure fair and equal access to airports and navigable airspace, both domestically and internationally, NBAA advocates effective and rational reform of the FAA, healthy funding for system capacity, equipment modernization, operations and management, fair and reasonable taxes as well as fair and reasonable fees, reasonable environmental laws, elimination or modification of conflicting government action, international aviation policy respectful of all aviation interests, thoughtful research and development, and practical product liability reform.

We appreciate the subcommittee's understanding and interest in general aviation, an integral part of our Nation's transportation system and a viable contributor to our Nation's economy.

Thank you very much, Mr. Chairman.

Mr. BORSKI. Thank you, Mr. Olcott.

Mr. Merlis, let me start with you.

In regard to aviation infrastructure needs, you testified that it is very difficult to determine the total financial need for the system. While I agree that forecast is not a precise science, I would nevertheless like to know in your opinion are there any capital development needs going unmet today in our airport system?

Mr. MERLIS. I think that the capital development needs in our airport system which are going unmet are more often the result of external forces which prevent them from taking place, such as at O'Hare and the other two examples I used.

I believe that while the timing of improvements may meet with some dissatisfaction, whether from inside the aviation industry or from the outside, the long-term program that is under way, particularly with the advent of the PFC is in place. I think we need to have some time to see how that works out and I think it would be premature to make any radical change in the system as we know it.

Mr. BORSKI. Let me ask, as airlines continue to provide more point-to-point service and move away from the hub-and-spoke system, how will that affect our aviation infrastructure needs?

Mr. MERLIS. I think that is a good example of one of the problems that exists in rushing to judgment in making decisions about expansion, particularly of airport facilities, not the airways facilities, but airport facilities.

As you move to a point-to-point kind of network, you may need fewer gates at a hub airport than you would need in a hub-and-spoke system. As more and more communities at the ends of those point-to-point networks gain traffic which they may not have today, those facilities or those airports may need more gates. So I think as the shake out continues, and it has been going on for the past four years, we might have a better perspective as to where appropriate airport expansion is necessary in order to account for this new way of doing business.

Mr. BORSKI. In your opinion, Mr. Merlis, how effective has FAA targeted airport development funds among different airport types?

Mr. MERLIS. Targeted among different airport types? I do not mean to malign the reliever program because we think it is a good concept, but if I am not mistaken, GAO recently commented that FAA, which has now spent $1.5 billion out of $12 billion since 1982, "does not know the extent to which this investment has alleviated or can alleviate congestion at larger commercial service airports." That is not to say don't do it; it is to say find out how it works.

Similarly with military set-asides and other kinds of programs, the evaluation of those is necessary to determine how to prioritize for the future, and I think there are questions that have been raised in a series of GAO studies as to whether or not the FAA has done that kind of evaluation.

Mr. BORSKI. Mr. Olcott, let me come to you. You have cited in your testimony the CBO report finding that reliever airports have not succeeded in drawing general aviation aircraft away from major airports, yet you argue that the reliever airport set-aside should not be modified.

What Federal interest is there in these airports if they don't relieve congestion at major airports?

Mr. OLCOTT. Mr. Chairman, may I make one comment before I answer that? May I have our written testimony submitted for the record?

Mr. BORSKI. Oh, by all means, it is done.

Mr. OLCOTT. Thank you.

We strongly disagree with the statement that the reliever airport system has not been effective. We agree with Mr. Merlis that the fundamental research should be done. We believe it will show that the reliever airport program indeed has been effective.

I would like to draw your attention to a graph that the FAA suggests is reflective of the operations of general aviation aircraft at the major hub airports. One point four percent is the number they use. It is interesting to note that there are 29 major hub airports. There are 299, 10 times as many, reliever airports. If the ratio were maintained, you would expect 14 percent of the general aviation airplanes to be based at reliever airports. Twice that percentage is based at reliever airports. You will find that member compa-

nies of the NBAA would prefer to go into Teterboro or Morristown rather than Kennedy, LaGuardia, or Newark.

We also agree with the statement Mr. Merlis made that we need to work on the air traffic control system, for in order to use a reliever airport effectively, you must have a highly efficient and effective air traffic control system, since the reliever airports share facilities such as TRACON with hub airports in major hub locations.

Mr. BORSKI. Thank you, sir.

The Chair now recognizes the distinguished Chair of the full committee, the gentleman from California, Mr. Mineta.

The CHAIR. Thank you very much, Chairman Borski. I would like to thank both Mr. Merlis and Mr. Olcott for being before us.

[Chair Mineta's prepared statement follows:]

NORMAN Y. MINETA, CHAIR

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

HEARING ON AVIATION INFRASTRUCTURE NEEDS

APRIL 28, 1994

Today, at our third hearing on infrastructure needs, we focus on the needs of the national aviation system.

The depressed economy of the last several years and the corresponding slump in the airline industry have given us a little breathing room in catching up with some of the unmet needs in our aviation system. But we should not be deceived by the easy availability of gates at some airports and the lower than expected demands on our air traffic control system.

Thanks to President Clinton's leadership in getting our economy moving again, we are now in the midst of a real recovery. And the airline industry is beginning to feel the benefits of that recovery. Moreover, airlines have been forced to attack their cost structures aggressively over the past two years, and the lowered costs will allow them to offer lower fares. And this, of course, will generate increased traffic.

As a result, I expect that airline operations will grow sharply in the next couple of years, and the inadequacies in our aviation infrastructure will then become painfully obvious. We have to invest enough in runways so that half of our airport capacity isn't shut down during bad weather, and we have to modernize our air traffic control system to cope with the growth of aviation traffic that we can now confidently predict.

Our freight transportation system is increasingly becoming a just-in-time system that emphasizes fast delivery of smaller shipments. In this kind of system, air cargo plays a more and more prominent role. We need to find a way to meet the needs of air cargo carriers, both air-side and land-side, so that they can meet the tight schedules that shippers increasingly demand of them.

So I look forward to hearing from Administrator Hinson how aviation fits into the Administration's vision of a National Transportation System. And I particularly welcome the testimony of the National Industrial Transportation League to tell us how the aviation system can better meet the needs of shippers.

The CHAIR. Mr. Merlis, I am a little troubled by your testimony. I am not sure what you are trying to get at. You want us to fully fund everything but you sort of tear into whether or not the AIP funds are being used by local managers or by regional FAA people in the best manner, and you talk about the monopoly of the airports, and yet at least when I was mayor of San Jose, I remember I had to live under a majority in interest clause, which gave the airlines more power over my airport than me as the mayor, so I am not sure what you are trying to tell us in your testimony.

You decry the railroad out to LaGuardia, but it seems to me, having gotten up last Thursday or Friday morning at 5:00 to make a 7:30 plane at John F. Kennedy Airport because of the anticipated traffic I was going to have, that we need to look at the totality of the problem, whether it is ground or air. You make comments about AIP funds being used for things like people movers?

I fly 150,000 miles a year. Three weekends out of the month I am back to San Jose, California. If you think I enjoy carrying a briefcase and a suit case and walking 5,280 feet through an airport, then I want you to accompany me sometime.

I want some convenience. I am Chairman of the Board of Review of the Metropolitan Airports Authority. We have an extensive program going on now at National and Dulles because we couldn't get the Transportation Appropriations Committee to appropriate the monies for the improvement at National and Dulles.

To me, as Chair of the Aviation Subcommittee, it was getting to be embarrassing that our National Airport was in the state that it was, and so what we did was to create a joint powers authority with Maryland, District of Columbia, and Virginia in order to give them $2 billion of bonding authority to build what we have to do, and so what we are doing, is building the new terminal right up against the Metro system so you come off Metro, walk, I don't know, 412 feet and, you will be at a gate.

I don't know what you are—it seems to me that we are trying to deal with the totality of the system. AIP funds aren't just for the airports—it is for air traffic, you know. I mean, you talk about air traffic control; we ought to corporatize the air traffic control system. I have yet to hear one person explain to me how by making that a corporation we improve procurement practices or we improve personnel practices, so I am not sure what you are trying to tell us, except that you are unhappy with how funds are being used.

Now, I need a clearer picture in terms of what we ought to be doing instead of a shotgun blast in terms of the AIP funding program.

Mr. MERLIS. Mr. Chairman, I don't mean to be confrontational.

First, you mentioned the New York traffic situation. There are five alternative methods for improving access to the New York airports which have not been explored the way this $6 billion train has been explored. These have to do with bus right-of-ways; electric buses; restoration of the Rockaway subway line; ferry systems, etc., yet $21 million has been spent in planning for a $6 billion train system and virtually nothing on lower cost alternatives.

We are suggesting that there is a need to be addressed, and it should be done on a more broadly-based basis rather than just pick something and say that is what we are going with.

With respect to DCA and Dulles, I think the airlines are major contributors to that construction project. We are major participants in it. We are totally in agreement with you that that needs to be done and we are financing it.

The CHAIR. Well, if you were there at the table with us, I am not sure that I fully agree.

Mr. MERLIS. Well, we are financing it.

The CHAIR. You are financing it, but look at the time it took us and the hurdles that we had to get over to get there, to where we are now. I understand the give and take in terms of people saying, well, we are building a Taj Mahal, and we are not going to pay for it, so I understand that. We went through that exercise.

Mr. MERLIS. The majority-in-interest clauses are falling by the wayside. There are far fewer today than there ever were in the past, so that aspect which you did face years ago isn't there anymore. I am focusing on a concern we have that this committee authorizes money through the AIP program, authorizes money for a variety of ways, and yet if municipalities can take that money for nonaviation-related purposes, then your aviation-related grants are going to be used for nonaviation purposes.

The CHAIR. One of the first, I guess, major battle cries that came out of that was Mayor Riordan of Los Angeles, one of the first attempts at a major move.

When I was mayor of San Jose, we took some of the things where the airport would draw on other resources of the city, whether it was our city attorney's department-and said, okay, they use two-man or whatever, years, charge that off to the airport fund.

Mr. MERLIS. It should be done that way.

The CHAIR. We were not doing what Mayor Riordan did, trying to get 3,500 police officers financed out of the airport, but we on this committee were also the very first ones here to tell him he couldn't do that. So, you know, we joined in that effort to say, hey, hold it, you can't use airport funds for off-airport purposes. But I guess as I listen to you in going through this whole testimony, I am just not sure what it was that you were trying to tell us, other than the fact that you are unhappy.

Mr. MERLIS. Sir, we are not unhappy. We think this committee has done an excellent job; what we think needs to be done is fine-tuning that is necessary to ensure that the monies which come out of the Congress for the purposes of aviation are allocated and spent where they get the biggest bang for the buck.

For example, my comment, with respect to regional spending within the FAA; anecdotally we may see that, but it is confirmed by the General Accounting Office that monies go into projects which do not necessarily bring the biggest bang for the buck but which have been allocated regionally according to a matrix.

So we have attempted to point out what we think are key issues, and those key issues are fine-tuning of some of the programs which already exist, and specifically with respect to the rates and charges problem, we think that it is Congress which ought to decide what the meaning of the term "reasonable" is, not the Department of Transportation.

We think Congress is far better suited to determining that since it created that requirement originally in the Antihead Tax Act.

Further, to address the air traffic control corporation issue, as Administrator Hinson said, this is a 365-day-a-year, 24-hour-a-day business. We, too believe that it must be run somewhat like a business.

I will use an example. The pay demonstration program which has resulted in differentials being provided at highly congested airports, that pay demonstration—has demonstrated, we believe—that it works. That pay demonstration program expires on June 17th.

The FAA, whether it is because of rules, regulations, it cannot do anything about it. We think that if it were a business and you found that——

The CHAIR. I am trying to help get that pay demonstration program extended.

Mr. MERLIS. We appreciate that, but we think that a business-oriented approach might be able to make that decision without the hurdles that you have to go through.

Similarly, we think that you could leverage funds if you ran air traffic control like a business, and not as you do on the kind of limitations in the unified Federal Government budget. It is, as Administrator Hinson said, a 365-day-a-year, 24-hour business, and we think that if it could run in a more businesslike manner, it would provide better service to the traveling public and shipping public at no increased cost.

So I am not trying to be confrontational or arbitrary. I was making observations about problems which we see. Overall, we think that the direction that is given particularly by this committee makes good sense, and we are trying to be constructive in what we think are the additional steps that ought to be taken.

The CHAIR. If you had your druthers, would you go airways or airside in terms of priority funding?

Mr. MERLIS. I think you have to identify the mix of projects that you are dealing with. In certain places there are airside improvements at an airport which are necessary in order to make the overall system work better. We think that the orientation which is going into the airways side of the business does make good sense. You have got to get the planes moving better, and then you can take care of those things which are on the ground, except in some localized areas.

The CHAIR. A lot of times, though, don't airports get driven by the needs of the airlines on that airport development side? People want more gates. Yet on the other hand, if I look at a gate utilization of some airlines I can see why Southwest Airlines does so well, because they get their planes in and out within, let's say, 20, 30 minutes. They may do with two gates a lot higher utilization in terms of number of operations or number of passengers they handle per gate than the three majors, and yet it seems to me that one of the things airlines always want is more gate space. I don't know whether they want it to elbow out a competitor or whether they need it really to enhance their own operations.

Mr. MERLIS. I think there are a relatively limited number of airports in the United States where airlines are finding themselves gate-short, and where they do find themselves gate-short they can do what others have done, which is build additional gates, if that is the case.

Clearly at the high-density airports we have a whole different set of problems, all of which are gate as well as air congestion related, which are not susceptible to that same kind of fix, but I think that where there is a shortage of gates more often than not, let's go out and build them.

The CHAIR. I also have some of the same thoughts you had about PFCs because I was one of the few who voted against the initiation of PFCs, either in the committee or in the Congress as a whole.

Mr. Olcott, let me just mention one thing. You mentioned MLS, but it seems to me we are phasing out MLS. I pushed for the filling up of the continental, of the hole, so to speak, in the continental—I am going to say continental divide, but that is not——

Mr. OLCOTT. We understand, sir.

The CHAIR. In terms of MLS, it seems to me we have scaled it down and the only units we have left are those that we have to put in at gateways to especially European countries because European country airlines are still using MLS, and to that extent it seems to me from what we started out with as a $2 billion plus program is now down to, I don't know, $500 million, $600 million, and the number of sets is now down to just completing or to have the adequate system, because I feel very similarly about the MLS. I think it was a system, that we ought to depend on Loran C, and I think we have pretty much tied the can to the MLS, except for the remaining systems to take care of our European airlines.

Mr. OLCOTT. Mr. Mineta, we understand that there is an obligation on the part of the U.S. Government to meet terms of international treaties, and the international community wants MLS, so we understand there are certain constraints, certain obligations that must be met. We trust that the focus will be just within those obligations.

The CHAIR. That is my understanding, and that is why I was commenting on it because I think it is only limited to that portion of adhering to the international treaties.

Let me ask one final question, if I might. That is with regard to this corporatization, if that is a word, of the air traffic control system. What are your concerns about that?

Mr. OLCOTT. We have seen nothing so far that suggests that corporatization will be a cure-all. We submit that the administration has only offered a concept, essentially bones and no meat. We await the administration's detailed plans.

Mr. Merlis indicated that the devil is in the details. We certainly agree. We as a group support the concept of reform. We do not see where corporatization automatically will provide that reform, but more significantly, we do not see why you have to go to corporatization to achieve reform.

We agree that the ATC system, the FAA, the Federal Government has to be run in a businesslike manner. In fact, the National Performance Review stated that the government should—in fact will—be run as a business. Why then has the FAA been singled out for not being appropriate for the type of reform the National Performance Review has called for?

We are not impressed with the concept of corporatization. We do not see it solving the major problems of procurement, personnel, budgets, management continuity by itself. We think reform can be

done, is necessary, and should be accomplished within the existing FAA structure.

The CHAIR. Given that statement, let me ask both of you—in what you have heard, in talking about the corporatization of the air traffic control system, are there some specific things that will deal with procurement and personnel? To me, those are the two big issues. Is there anything in there that I haven't heard or seen to really deal with how we solve those two major problems?

Mr. Merlis?

Mr. MERLIS. Regrettably—and hopefully this will be revealed next week—we haven't seen the details that indicate it's the solution; and it is conceivable that the details will not be the solution.

The CHAIR. I am sorry, what is the reference to next week?

Mr. MERLIS. Earlier, Administrator Hinson indicated that Secretary Peña would release the studies that have been completed by the interagency group, so we will see the details then. Those details conceivably, as Mr. Olcott says, could be incorporated into the existing structure. The devil is in the details. But philosophically we think that there are certain businesslike concepts which are alien to the regular FAA and governmental processes which we have grave doubts could ever be done in the current FAA. Using leverage as an example or an independent personnel system which rewards and also holds people accountable and the procurement system where we see from time to time unbelievable delays which arise because of bid challenges or a failure to lock in technical development specifications in an appropriate time and the continuing and ongoing process of changing specifications. These kinds of things happen in the private sector, too, but at least there is accountability which results in people paying a price or being rewarded for that kind of thing.

Now, if you can impose all of those or instill all of those in the existing FAA, you don't need a corporation.

The CHAIR. When the Aviation Subcommittee had their hearings on the Advanced Automation System, I said to Mr. Hinson that there are no penalties for screw-ups in government, and to me that was a major screw-up and there ought to be a penalty being paid. So you are absolutely right.

Well, again, thank you very, very much for both of your testimonies before us. I appreciate it.

Mr. BORSKI. Thanks to the distinguished Chair and the distinguished gentlemen. We would like to thank Mr. Merlis and Mr. Olcott for your testimony today.

Mr. BORSKI. Our third witness is Mr. James Wilding, General Manager, Metropolitan Washington Airports Authority. Mr. Wilding is representing the American Association of Airport Executives and the Airports Council International—North America.

Mr. Wilding, if I may ask you to stand, please, and raise your right hand.

[Witness sworn.]

Mr. BORSKI. Thank you, sir. You may proceed. I remind you that your full statement will be made a part of the record, and you may proceed, sir.

TESTIMONY OF JAMES WILDING, GENERAL MANAGER, METROPOLITAN WASHINGTON AIRPORTS AUTHORITY, AND FIRST VICE-CHAIRMAN, AIRPORTS COUNCIL INTERNATIONAL—NORTH AMERICA

Mr. WILDING. Good morning. I am Jim Wilding, the General Manager of the Metropolitan Washington Airports Authority that operates both National and Dulles Airports here in the Washington area, and also the First Vice Chairman of the Airports Council International—North America. I am pleased to be here today on behalf of both ACI and the American Association of Airport Executives, representing the local, State and regional governmental bodies and the men and women who manage and operate our Nation's airports.

We want to thank you for holding this hearing and helping to focus attention on the Nation's aviation and transportation infrastructure needs.

We have submitted a relatively lengthy and detailed statement, and I would like to just sort of run through the highlights of that, if I may.

The air transportation system is vital to our national and local economies and essential to the safe and efficient transportation of people and goods, both domestically and internationally. Investing in our aviation infrastructure is critical to provide the facilities that airlines and the air transportation system needs now and in the future.

Airport and air traffic delays are still with us despite the temporary downturn in the economy. According to the FAA, and as mentioned earlier today, 23 major airports are seriously congested today, and that number will grow to 33 in less than 10 years unless major capacity improvements are made. Delays cost the airlines today more than $32 million each year at each of those 23 congested airports, not to mention the cost and inconvenience to air travelers. Even the most conservative air travel growth projections, if realized, will place a tremendous strain on the existing airport and airspace system and will require a renewed commitment to expand system capacity. We simply cannot afford the billions of dollars in annual delay costs to the airlines and air travelers that are caused by an inefficient and inadequate air transportation system.

We believe that the local and State government airport operators, with Federal Government support, have the responsibility to look long term to plan, finance and build not only the airport facilities needed today but also those that will be needed in the future. We cannot afford to be shortsighted. That is what got us into the position we are in now, with inadequate airport capacity and with the delays that result from that inadequacy.

Investment in airport development fosters not only a competitive, efficient and growing air transportation system, it also contributes to economic revitalization and growth throughout the country, creating jobs and wages, new business activity, better air service, and opportunities for healthy competition. For each one billion dollars invested in airport development, approximately 40,000 to 50,000 jobs are created and sustained with related multiplier spending and tax revenue benefits for localities, States, and the Federal Government.

During the Airport Improvement program reauthorization hearings last year, we presented an updated estimate of airport capital development funding needs nationwide that reconfirmed that airports require more than $10 billion each year over the next five years, at least $50 billion for needed capital improvement and capacity expansion projects. They represent projects that are essential to the continued development, improvement, and expansion of our airport infrastructure.

Many of these projects have been supported by the airlines serving the respective airports, many are on a very long list of more than $8 billion in unfunded backlog project applications at the FAA. More than $6 billion, or 60 percent of the $10 billion annual total, are projects eligible for AIP grants. Compared to the $10 billion in annual development funding needs, the primary airport funding sources, AIP grants, at about $1.69 billion a year for 1994, an annual average of about $3.5 billion in airport bonds, and an estimated $800 million in PFC revenues fall far short of the level of funding that is actually required.

We are underfunding our airport infrastructure needs in this country by at least 40 percent. The AIP program is providing less than one-third of the AIP-eligible project needs. It is important to remember that the AIP program is funded from dedicated passenger and shipper taxes collected by the Federal Government in the Airport and Airways Trust Fund. Passengers and shippers deserve to have their aviation taxes fully spent and to receive the full benefits of the airport expansion and improvements for which they have paid.

The fact is that the current AIP appropriation level of $1.69 billion for Fiscal 1994 is seriously inadequate to meet the tremendous and growing needs. Every dollar that AIP is underfunded forces airports to find alternative funding for important projects, in most cases by increasing airline charges to support greater debt financing.

A particular area where airport needs are growing is landside projects and access roads, primarily to relieve congestion and to help achieve compliance with Federal Clean Air Act requirements. Preliminary results from an ACI survey indicate that landside congestion has become a major problem for most airports. Seventy-one percent of the airports surveyed identified landside access and roadway congestion to be the greatest problem area for passengers.

The AIP program works very well as long as sufficient funds are provided. Since its inception in 1982, it has been effective in allocating more than $13 billion in grants among the various types and categories of airports and projects across the country. FAA has in place a priority ranking system to enable the Agency to identify projects for discretionary funding that will have the most benefit on the local and national aviation system. Unfortunately, FAA is forced to turn away many important projects because of inadequate funds.

As you know, the AIP program expired last October, and airports have received no AIP grants since then. This long lapse in program funding has been costly and now threatens to severely disrupt airport development programs with the peak construction season now upon us. Many existing and new projects have been delayed or not

started as a result. In other cases, airports must proceed with projects by seeking alternative funding sources such as bonds or reserves. Alternative financing will dramatically increase the cost of funding these projects for both airports and airlines.

In addition to the extra costs of construction delays and alternative financing, the AIP lapse is costing thousands of jobs and denying economic benefits for communities and better airport facilities for air travelers. Based on the preliminary estimates of the impacts of having no AIP grants this year, which are referenced in some detail in our written statement, there is no doubt that all of us are paying a very big price, and this situation cannot be allowed to continue much longer.

We commend the House for passing H.R. 2739 which would provide a three-year authorization of the AIP program and more than $2.1 billion annually. We are hopeful the Senate will soon act on the multiyear reauthorization bill it has pending. At least a $2.1 billion authorization level is needed, with annual increases, recognizing again that this is far short of actual funding needs. Returning to the multiyear cycle for AIP will allow our airports to better plan and build for the future in a more cost-effective manner. As we have noted, capital development projects have long lead times, and financial uncertainty can cause serious project delays and cost escalation.

A little over three years ago Congress enacted the Passenger Facility Charge to help bridge the gap between annual airport capital development funding needs and inadequate funding from the AIP program. The PFC program is still young, but already is having a major beneficial effect on airport development. Last year, airports imposing PFCs collected $486 million in PFC revenues. FAA projects that in 1994 the PFC revenues will be $750 to $800 million.

Presently, 63 percent of large and medium hub airports are imposing PFCs, and many smaller airports are benefiting from the program as well. The PFC program enables airports to respond to the demands and needs of their communities and the air travelers who rely on the airport. PFCs are building worthwhile and needed projects in addition to airside projects such as runways and taxiways. PFCs are being used by airports to effectively address long neglected and underfunded needs for noise mitigation, terminal improvements and expansions, ground access projects, and the expansion of gates to increase air service for their communities and expand competitive opportunities for the airlines. PFC-funded projects are also creating jobs and stimulating business investment and opportunities for the airlines and many other airport-related businesses.

With no AIP program this year, PFCs have been critically important to help many airports proceed at least in part with funding for projects. Without PFCs, many projects would go unfunded or would at least be delayed. The long-term capacity improvements and benefits they provide would not be available when the airlines and traveling public needs them, and the jobs and economic benefits they provide would not be available now when the Nation's economy needs them.

Thank you again very much for the opportunity to testify today, and I, of course, would be delighted to respond to any questions.

Mr. BORSKI. Thank you very much, sir.

Mr. Wilding, let me ask, in the current budget climate in which there are always more deserving projects than there are available funds, is the airport community satisfied with the way FAA prioritizes airport needs?

Mr. WILDING. I think I would say we are about 90 to 95 percent satisfied. We were pleased to participate in a task force that the FAA put together to try to tune up their process a bit; and we along with the other participants, including the airlines, made some suggestions that we hope were constructive.

But it is generally a yes answer to that question, with a little tinkering at the edges.

Mr. BORSKI. Mr. Wilding, you referred to the airport capital development needs being based on your nationwide survey of airport and FAA review and confirmation. Would you describe for us the level of scrutiny that FAA exerts in reviewing and confirming airport development needs?

Mr. WILDING. I think the FAA, you know, that is kind of a tricky subject; and if you put together a list of needs and don't discipline it and spend an awful lot of time really wringing it out, you are not real sure what you have at the end of the day. That is largely why we went and did our own survey as part of the AIP reauthorization last year.

And I think it is fair to say that we really sort of cautioned our members to put real stuff in there, if you will, and don't fluff it up, so that we were pretty comfortable when we came up with that $50 billion over-the-next-five-years figure; and again it is kind of consistent with what FAA was saying, but I think frankly they were kind of glad we did a lot of the work we did on that, and I think it raised their comfort level that they really had it in focus.

Mr. BORSKI. Mr. Wilding, you heard the testimony of Mr. Merlis with regard to the issue of revenue diversion. How serious is the problem of revenue diversion and what needs to be done about it?

Mr. WILDING. I do not believe it is a serious problem today, but I agree with Mr. Merlis that it potentially could be a serious problem; and both of the associations I am speaking for today are just firmly against revenue diversion, believe the Federal law is adequate on it today, believe if it gave people greater comfort that there could be an expanded role for DOT in policing against revenue diversion.

So it is a horse that is not out of the barn yet, in my view, and if somebody wants to nail the barn door shut a little harder, that is fine with us.

Mr. BORSKI. Thank you, sir.

Does the distinguished Chair of the full committee, Mr. Mineta, desire recognition?

The CHAIR. I just want to thank Mr. Wilding for being here and representing ACI and doing such a great job for us at the two airports.

Mr. WILDING. Thank you, sir.

Mr. BORSKI. Mr. Wilding, thank you very much for your time and testimony. We appreciate it, sir.

Mr. WILDING. Thank you again.

Mr. BORSKI. Our fourth panel, Mr. Steve Alterman, President of the Air Freight Association; and Mr. Michel King, Chairman, Air and Business Committee, National Industrial Transportation League.

TESTIMONY OF STEPHEN ALTERMAN, PRESIDENT, AIR FREIGHT ASSOCIATION; AND MICHAEL S. KING, FREIGHT AND TRANSPORTATION MANAGER, TRW VEHICLE SAFETY SYSTEMS, AND CHAIRMAN, AIR AND BUSINESS TRANSPORTATION COMMITTEE, THE NATIONAL INDUSTRIAL TRANSPORTATION LEAGUE

Mr. BORSKI. Gentlemen, would you please stand and raise your right hands.

[Witnesses sworn.]

Mr. BORSKI. Mr. Alterman—let me remind each of you, if I might, that your full testimony will be made a part of the record, and you may proceed and highlight it in whatever way you feel most comfortable.

Mr. ALTERMAN. Thank you. Good morning. My name is Steve Alterman, and I am President of the Air Freight Association. We are a nationwide organization representing the interests of the air cargo industry. Our membership includes virtually all of the major all-cargo airlines as well as several airports with heavy cargo involvement. We appreciate the opportunity to testify today on the important issue of the future of our aviation infrastructure.

The issue of defining and providing for these aviation infrastructure needs is obviously one of today's major concerns for our members. Without adequate facilities and airways management, the future growth of our industry will be severely inhibited.

I would like to, as an aside, tell you how happy I am that I am on a panel with the NIT League, who are the shippers of this country. We don't fly airplanes for the sake of flying airplanes around the sky; we do it to provide a service for those people who need to ship goods, and I think it is crucially important that the needs of those shippers is represented this morning at this hearing. I say that without having heard what Mr. King is going to say.

Before going into detail on our infrastructure concerns, it would probably be a good idea briefly to describe our industry, for the all-cargo business is significantly different from traditional passenger operations.

First, to a very large degree, the all-cargo industry can be traced to the Cargo Deregulation Act of 1977. Prior to that date, there were a few cargo specialists but not the industry as we know it today. With the advent of domestic cargo deregulation, an entire new industry was born—the overnight or expedited package delivery systems. In addition, the movement of traditional "heavy" freight changed its character as new companies entered the direct air transportation field. From a modest beginning in the late 1970s, our industry has grown to provide overnight service to every point in the United States. Today's annual revenues top $20 billion, and we employ over 150,000 full-time personnel. And to a very large degree, we are dependent on the aviation infrastructure to sustain this growth.

Second, from an operational standpoint, we place different demands on the aviation system from those of the passenger carriers. We do not need "glitzy" passenger terminals and rather than operating our aircraft in excess of 10 hours a day, all-cargo operators typically use their equipment only four to five hours. Moreover, "prime time" for freighter operations is usually at night when passenger demand is at its lowest. While these facts illustrate that we place relatively less stress on the system, they also mean that our unique needs must be taken into account in discussing the infrastructure issue.

One final preliminary point should be made before detailing our specific concerns. With respect to the financing of the aviation infrastructure—and there has been much testimony about it this morning—the all-cargo industry has never objected to paying its fair share of the system costs. At the same time, monies which are collected and paid by our industry for infrastructure capital should not be permitted to be spent on reducing the national debt or financing local projects unrelated to airport costs. There is enough to be done in ensuring adequate aviation system facilities without also using the airline industry as a "universal bank" to fund other projects.

With these preliminary points in mind, the Air Freight Association offers the following specific comments:

1. The national airways system must be available to users 24 hours a day to accommodate the realities of today's cargo marketplace. As noted briefly above, much of the all-cargo operation occurs during nighttime hours. Shipments are picked up from businesses at the close of the business day; they are then flown to major hubs where they are sorted and placed on aircraft for delivery. This "sort" generally takes place in the hours around midnight, and the delivery aircraft fly in the early morning hours to permit early next-day delivery to consignees throughout the country. This activity requires that the national system be available to our members during these crucial nighttime hours.

Past experience indicates that this unique cargo requirement is not always recognized by Federal regulators. For example, until the all-cargo industry explained its problems to the FAA, computers were regularly reprogrammed and out of service at precisely those hours that cargo operations were at their peak. After a series of meetings on this issue, an accommodation was reached which was acceptable to both parties. Basically, the reprogramming was done on the weekends when our services are at their lowest. If similar problems occur in the future, shippers will be inconvenienced by delays and future growth will be inhibited. Accordingly, it is necessary that the FAA, or whatever entity is in charge of a future system, must ensure that the system is operational 24 hours a day; and adequate funding must be available to permit the FAA to provide all-night service.

I noted earlier that Administrator Hinson assured everybody that the system would be open 24 hours a day—and our only concern and perhaps it is a bit of a stretch—is every time there is a cutback in services, the easiest thing to do is cut back where the screaming is less, and that is at night. We noticed that the noise debate, when people want to cut back service, they just cut back

nighttime service. It is not a major problem today, it is a potential problem that we have to be aware about.

Second, the cargo set-aside program in the AIP program must be maintained. The present Act provides that 3.5 percent of the AIP funds authorized be set aside for "cargo service airports," defined as those airports whose aggregate annual landed weight is in excess of 100 million pounds. This provision has been inserted in the AIP program to insure that those airports with significant all-cargo operations have the funds available to provide for cargo infrastructure needs. We urge that that provision be maintained.

Third, the increasingly intermodal nature of the air freight business must be recognized and provided for. In the modern commercial marketplace, the movement of goods is becoming increasingly intermodal with companies providing seamless transportation for the shipping public. Our members are now equipped to provide door-to-door transportation services using whatever mode is most efficient to deliver the cargo in the time frame requested by the customer. In order to ensure that this trend continues, it will be necessary to provide an infrastructure that recognizes both air and ground components. The "black and white" difference that historically differentiated between air and ground movements has become much less clear, and it is relatively more difficult to determine who should finance the infrastructure of this gray area.

In our opinion, it makes little sense to play bureaucratic games over which pot of money is tapped to ensure adequate intermodal connections. If contiguous landside development is necessary for the movement of freight to and from airports, we have no problem with funding by the FAA. At the same time, we believe that such judgments should not be made on an ad hoc basis or in a vacuum, but rather should be made only in accordance with a set of written guidelines which should be developed through normal Federal rulemaking procedures if procedures are going to be changed.

Thank you again for the opportunity to testify before you today. Of course, I would be happy to answer any questions.

Mr. BORSKI. Thank you, sir.

Next, we will hear from Mr. King.

Mr. KING. Thank you, Mr. Chairman, committee members. I am the Freight and Transportation Manager for TRW Vehicle Safety Systems. We are the manufacturer of automotive airbags.

You have my testimony before you. I will be summarizing portions of it and adding to it. I am also the Chairman of the National Industrial Transportation League's Air and Business Transportation Committee. The League welcomes the opportunity to provide its views relative to shippers' needs on the Nation's aviation infrastructure.

The League is the oldest and largest broad-based national association representing shippers. League members include many of the largest industrial and commercial concerns in the United States, as well as numerous small shippers. The League also represents groups and associations of shippers in national and international commerce. Our members are substantial users of all modes of transportation, including air transportation. League members export and import substantial quantities of products from points all over the world and therefore are greatly affected by air transpor-

tation. Stated simply, League members are the customers of the air transportation system.

Air transportation is playing an increasingly important role for today's transportation official. As my company and other industrial and commercial companies in the United States reduce our inventory levels and increase our through-puts through the factory, just-in-time deliveries become increasingly important. Companies that rely on surface transportation for JIT deliveries are vulnerable when there is an interruption in service, such as the current trucking strike. When these things happen, they are immediately driven to the air for on-time deliveries.

Air transportation is becoming more a necessity, rather than a luxury. Air cargo traffic in 1993 grew faster than air passenger traffic. For our business alone, we grew 200 percent in tonnage from 1992 to 1993. We are going to have another 91 percent increase in tonnage between 1993 and 1994. The long-term trend shows that the air cargo carrier industry has grown from a base of virtually zero in 1977 to a $20 billion annual business today. Almost every area of the country is accessible to transportation.

Shippers must develop new and better ways of reaching domestic and world markets. Air transportation will be an integral component for U.S. businesses in reaching these world markets. Global sourcing requires that manufacturers receive and ship products more frequently and more rapidly over long distances. Air freight accounts for nearly one-third of U.S. products exported, and this percentage is expected to increase over the course of the 1990s.

It is important for industries that aviation infrastructure be maintained, improved, and expanded. We were talking a little earlier about the conversion of military bases. In my home State of Arizona, we recently turned Williams Air Force Base over to civilian use, and from a shipper's point of view, in one of their executive summaries it says, Williams Gateway is expected to more than double over the planning period from 5,600 tons annually to 13,500 tons by the year 2015. As a shipper, that gives us a lot more flexibility because now the airport is there for educational, recreational, commercial uses.

Without an investment in the aviation infrastructure, industry will experience delays in delivery cycles, costing millions of dollars and excess transportation costs. The unique needs of the air cargo industry should not be overlooked in the funding process.

As was stated earlier, 3.5 percent of Airport Improvement program grants are set-asides for airports handling a specific minimum level of freight. It is absolutely essential that this specific set-aside is continued and/or possibly increased. Funds flowing to such airports under the set-aside program should be used on cargo-related projects.

Legislation currently pending in the Senate, S. 1491 and H.R. 2739, which passed the House last year, would authorize funding for research, emergency, and improvements to the Nation's aviation infrastructure. H.R. 2739 is supported by the League.

Utilization of monies for nonairport-related purposes is of particular interest and concern for U.S. shippers. In recent months, considerable attention has been given to the escalating landing fees charged by some airports and airline carriers. While the League

supports the institution of these fees for the purpose of reinvesting that into the airport's infrastructure, the League opposes their use for nonaviation purposes.

It is within this context that the League supports an amendment to S. 1491 that establishes a definition of what constitutes a reasonable rate. This amendment would require airports to consider all revenue sources and surpluses before charging fees. It would also require that the Department of Transportation issue formal rules to determine what a reasonable rate is and to establish a dispute-settling process.

In defining nonaviation purposes, it should be pointed out that the League does not wish to preclude the use of funds for such things as airport access, such as rails or subways or programs for the acquisition of adjacent property necessary for airport expansion or related activities. Both would facilitate the free flow of commerce. These uses are critical to shippers' needs and must not be forgotten in planning for meeting this Nation's present and future transportation requirements.

Intermodal capability in the airport planning process is absolutely critical for successful freight operations. One provision that has been proposed for inclusion in S. 1491 would help in accelerating improvements in the Nation's intermodal capabilities. The amendment would deregulate the intrastate activities of all intermodal all-cargo carriers.

As proposed, this amendment would amend the Federal Aviation Act and would deregulate related intrastate motor carrier operations. It covers rates, routes, and services of intermodal carriers transporting property, pieces, parcels or packages. More importantly, it defines the intermodal all-cargo carrier as "an air carrier that undertakes to provide the transportation described in section 105(a)(4) or any other carrier having authority to provide transportation which is affiliated with an air carrier through common ownership."

The amendment tracks the decision of the 9th Circuit Court of Appeals in a decision issued last year finding that integrated air package express companies are exempt from California State regulation. Recently the State of Texas adopted the 9th Circuit ruling. If enacted, this amendment would broaden these rulings to encompass the entire country and expand it by including all direct and indirect intermodal all-cargo air carriers.

The ultimate decision as to who qualifies as an indirect all-cargo air carrier rests with the Department of Transportation. A spokesman for DOT stated that their criteria defines an indirect cargo air carrier as any U.S. citizen who undertakes to engage directly in air transportation of property, and uses for the whole or any part of such transportation, the services of an air carrier.

The action being proposed in Congress would bring about efficiencies for both shippers and carriers across the country. By expanding the definition to include all direct and indirect cargo air carriers, the playing field will be open to all carriers. The result of these reforms, if enacted, will be increased options for shippers.

Removing State regulations which pose barriers to the free flow of commerce will place an added stimulus on the airport planners

to ensure that their designs allow for a smooth transition between the various modes.

In conclusion, increasing pressures on U.S. companies to be competitive in the world marketplace require that the Nation has an aviation infrastructure in place to meet these needs. "Seamless transportation" is a popular phrase today to describe the types of services that today's consumers demand. Shippers in the 1990s are requiring carriers to incorporate various modes so as to provide the best possible service. Our transportation infrastructure planning must include the special needs of each mode and how they integrate.

Investment in our air freight infrastructure is as crucial as shippers utilize it more frequently for daily usage and not just for emergency or rush freight. Delays in building and expanding airports, access road congestion, lack of space utilization for staging and loading will all translate into increased transportation costs to shippers and inhibit our ability to successfully compete in the world marketplace.

I thank the subcommittee for this opportunity to appear before you, and I will answer any questions you might have.

Mr. BORSKI. Thank you very much.

Mr. Alterman and Mr. King, you have emphasized in your testimony the need to maintain the 3.5 percent set-aside in the AIP program for all cargo airports to ensure that funds are available for cargo infrastructure needs. Can you give us some examples of the kinds of cargo infrastructure needs this money is required for?

Mr. KING. From my point of view, TRW services the automotive industry, and when we are using air freight to transport products, we are subject to the schedules of the airlines. A lot of the cargo carriers are off site from the airport; they may be five miles away from that facility. That results in earlier pickups from the shippers' place of business, so if they have to pick up from my location earlier than I need to ship the product, then I am required now to go further into charters and spend excess money that I wouldn't have had to spend previously. If that carrier were on-site on the airport, my costs would be reduced.

Mr. ALTERMAN. I would just like to point out, so there is no misunderstanding, that set-aside is not required to be spent solely on cargo projects. What it does do is it enables those airports which have significant cargo presence to be able to have a pot of money to spend on the cargo projects. The reason that is important is that, like a lot of other areas, there is a lot of fighting for the discretionary money that is available; and traditionally, cargo seems to get to the back of that list rather than the front of that list. That is the reason it is an important provision.

I think Mr. King has hit on it. We need more cargo facilities; we need access to those cargo facilities. When I referred a bit obliquely in the testimony to, perhaps, roads coming in and servicing the airport, it is a big delay for cargo companies to have to send all their trucks through the same gate that the passengers are using to get to the terminals and then wind back through to their terminals.

We need better connections, we need better facilities at the airports, and that set-aside helps us get them.

Mr. BORSKI. Mr. Alterman, how much of a problem do your members have with adequate intermodal connections?

Mr. ALTERMAN. There is some. I wouldn't want to overstate it. As a matter of fact, if I can preface my answer, I think if I hadn't gotten a letter requesting that we testify today, and I knew about your hearing, I am not sure I would have made a major effort to be here.

The cargo industry is concerned that it be able to continue operating; as we grow, the concerns get more important. We are an intermodal business and the intermodal connections are very important to us. We have made do so far, but as we expand, it is going to be more and more important that those connections are being made.

If I can give you one quick example, someone earlier today mentioned Denver International Airport, and I was afraid that I would be tempted to also bring up Denver International Airport before we finished. When that airport was first conceived, the cargo area was going to be on the north side of the airport, which was terribly inconvenient. They have subsequently moved our facilities to the south side of that airport, which is relatively more convenient than the north side, although it is not where we would rather be, I think, if we had our choice in the Denver area.

But one issue, that is a place where the access to the airport is through the main gate. If there were another gate that accessed our facilities, we could both take the pressure off the passengers coming into that airport and it would enable us to meet later cutoffs for our customers because it would take less time to get there.

This is going to happen more and more in the future. I would be overstating it to tell you it is a major problem today, but it may become one.

Mr. BORSKI. Mr. Alterman, we are all familiar with the financial condition of our Nation's passenger airlines. How would you characterize the financial condition of the all-cargo carrier industry?

Mr. ALTERMAN. Fine, thank you.

Mr. BORSKI. How would the failure to make adequate aviation infrastructure investments affect that condition?

Mr. ALTERMAN. I think it is all—one of the problems is, when you try to segregate questions and topics, if I answer that one directly without referring to the whole process and the whole system, it becomes a little bit whiney, I think, but I think that the answer is that without adequate infrastructure, the expansion of our industry will be inhibited or at least potentially inhibited.

We need to finance the system. I agree with Mr. Wilding that, you know, you have got tons of projects out there and you have to prioritize them. It would be nice sometime if we didn't, if we could spend it on all of them, but there is only a limited amount of money. All we urge is that when that money that is being used to finance the infrastructure is passed around that could somebody remember that we are out there.

I think it is absolutely necessary we fund cargo projects. I couldn't even tell you today what they might be five years from now. I suspect that the intermodal connection issue is going to be one of them, but it is crucial to us.

Mr. BORSKI. Mr. Alterman, how much do you anticipate the air freight business will grow in the next decade?

Mr. ALTERMAN. Another tough question, because I am going to have to segregate that domestically and internationally.

Most of the growth of our industry from the late 1970s through today has been domestic growth and the actual creation of a new industry. I would say, to a large extent, the all-cargo business today, domestically, is becoming a mature industry and the double-digit growth of the 1980s may be somewhat behind us. I suspect, however, that that may be overcome by international growth if and when we can export our deregulation experiment in the United States to international markets. I know that is a subject of another hearing now, scheduled for next week by another subcommittee, but I think it is difficult to guess what the growth rates will be in the industry without knowing how more open international markets are going to be. International expansion is likely to be a double-digit expansion through the turn of the century.

Mr. BORSKI. Okay. Mr. King, you emphasized the need for intermodal capabilities in the airport planning process. How good a job are the airports doing in planning for the intermodal needs of air-cargo carriers and shippers?

Mr. KING. Today, I don't think they are doing a very good job at all. The only intermodal use that I think the airports are using today are the truck/air. I don't believe that there is any infrastructure in place for the use of rail or subways or any other means to get products to the airports.

Mr. BORSKI. Mr. King, you testified that removing State regulations which pose barriers to the free flow of commerce place an added stimulus on airport planners to ensure that their designs allow for a smooth transition between various modes. Could you be more specific for us?

Mr. KING. I think the intermodal use—as far as spending monies for access roads, the League believes that we should spend money that is used wisely to integrate airport use.

For example, we heard about the rail expansion. If that is leading into an airport for intermodal use, we want to expand on that. If we need further access roads, we want to expand for those uses.

Mr. BORSKI. What about the State regulations which you mentioned in your testimony?

Does anything particular come to mind that you want to talk to us about?

Mr. KING. Which statement was that again, sir?

Mr. BORSKI. You testified that removing State regulations which pose barriers to the free flow of commerce would place an added stimulus on airport planners.

All right, let me ask one final question. What kind of benefits do you see for shippers with the development and implementation of the Global Positioning System?

Mr. KING. Corporate positioning system?

Mr. BORSKI. The Global Positioning System, GPS system. Do you see any further benefits for you, for the shippers with the development of that system?

Mr. KING. I am not familiar with that system, sir.

Mr. BORSKI. The gentleman from Oklahoma.

Mr. INHOFE. Thank you, Mr. Chairman. We are trying to calculate over here on this—we are devoting a lot of time to this set-aside issue. Are we only talking about in Fiscal Year 1993, $63 million?

Mr. ALTERMAN. That sounds about right. I must admit that when the law was changed last year there used to be a $50 million cap on the set-aside program, no matter what, the then 3 percent came out, the number was, I believe, increased to 3.5 percent; and right before I came here, I read what the limitations are, and after going through them for about a half-hour, I am afraid I don't understand what they are, but $63 million sounds about right.

Mr. INHOFE. I don't feel so bad then.

You mentioned—I am just curious because I don't know—one of you in your testimony said that you don't use all that amount that is set aside, and I am wondering what happens to that which is not used. Did I misunderstand you?

Mr. ALTERMAN. I believe what I said was that it does not necessarily have to be used on cargo projects. I think all the money is spent. I just didn't want any misunderstanding that the cargo set-aside had to be used on all-cargo projects. The cargo set-aside——

Mr. INHOFE. Those projects that just benefit cargo, so it could be any other improvement that would benefit other——

Mr. ALTERMAN. You could use it on the passenger terminal. What that provision does, though, is it ensures that those airports which have a significant presence in the cargo business have funds available. The assumption is they will spend at least some of them on our projects.

Mr. INHOFE. Sure. Okay, that is clear.

You heard the questioning of the Administrator on the air traffic control corporation concept, and I am sure that you have had many, many discussions. You may know more about it than I do.

Mr. ALTERMAN. I doubt that.

Mr. INHOFE. Well, what are your thoughts from the little information you do have?

Mr. ALTERMAN. I do think that perhaps the last panel said it correctly. I think that the concept is intriguing, the concept of improving and reforming is certainly one that should be studied; but as Mr. Merlis said, the devil may be in the details. We have no idea exactly what is going to come out of the administration, we have no idea how that is going to be funded, and it is difficult to give unqualified support to something that you are really not sure what it is going to look like.

We have supported the concept of looking at that, but we have not been privy to the debates leading up to what is coming out, apparently next week, and that is the administration's study.

Mr. INHOFE. I guess it would be easier just to wait until next week before getting into it, but the concept is that aviation doesn't benefit any element outside of aviation where currently there is approximately a 25 percent subsidy; and in my opinion——

Did you happen to read the article I wrote for Roll Call on that?

Mr. ALTERMAN. No, but after you mentioned it this morning, I think I will go back and read it.

Mr. INHOFE. Okay. Well, you might do that before you form your opinions, and then we will see how far off we are in the little information that we have, but it appeared to me that amount would be eliminated and would go for some other purpose. Then as government corporations very often are, they build in some kind of a profit. It would be my fear that that might be bled off, too, so I hope that all of industry will look at it very carefully because that is quite a dramatic departure from the way we have been doing business.

Maybe that is good. Maybe we will wait. Thank you.

Mr. BORSKI. Okay, gentlemen, thank you very much for your time and testimony.

There being no further business before the subcommittee, this hearing is adjourned. Thank you.

[Whereupon, at 12:15 p.m., the subcommittee was adjourned.]

PREPARED STATEMENTS SUBMITTED BY WITNESSES

BEFORE THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

UNITED STATES HOUSE OF REPRESENTATIVES

WASHINGTON, D.C.

Comments of Stephen A. Alterman
President
Air Freight Association
April 28, 1994

AVIATION INFRASTRUCTURE NEEDS

Good Morning. My name is Steve Alterman and I am president of the Air Freight Association, a nationwide organization representing the interests of the air cargo industry. (Attached as Appendix A is a copy of our current membership list). Our membership includes virtually all of the major all-cargo airlines as well as several airports with heavy cargo involvement. We appreciate the opportunity to testify today on the important issue of the future of our aviation infrastructure. The issue of defining and providing for these aviation infrastructure needs is obviously one of today's major concerns for our members. Without adequate facilities and airways management, the future growth of our industry will be severely inhibited.

Before going into detail on our infrastructure concerns, it would probably be a good idea briefly to describe our industry -- for the all-cargo business is significantly different from traditional passenger operations. **First**, to a very large degree, the all-cargo industry can be

traced to the Cargo Deregulation Act of 1977. Prior to that date, there were a few cargo specialists, but not the industry as we know it today. With the advent of domestic cargo deregulation, an entire new industry was born -- the overnight or expedited package delivery systems. In addition, the movement of traditional "heavy" freight changed its character as new companies entered the direct air transportation field. From a modest beginning in the late 1970s, our industry has grown to provide overnight service to every point in the United States. Today's annual revenues top $20 billion and we employ over 150,000 full time personnel. And to a very large degree, we are dependent on the aviation infrastructure to sustain this growth.

Second, from an operational standpoint, we place different demands on the aviation system from those of the passenger carriers. We do not need "glitzy" passenger terminals and rather than operating our aircraft in excess of 10 hours a day, all-cargo operators typically use their equipment only 4-5 hours. Moreover, "prime time" for freighter operations is usually at night when passenger demand is at its lowest. While these facts illustrate that we place relatively less stress on the system, they also mean that our unique needs must be taken into account in discussing the infrastructure issue.

One final preliminary point should be made before detailing our specific infrastructure concerns. With respect to the financing of the aviation infrastructure, the all-cargo industry has never objected to paying its fair share of the system costs. At the same time, monies which are collected and paid by our industry for infrastructure capital should **not** be permitted to be spent on reducing the national debt or financing local projects unrelated to airport costs. There is

enough to be done in ensuring adequate aviation system facilities without also using the airline industry as a "universal bank" to fund other local projects.

With these preliminary points in mind, the Air Freight Association offers the following specific comments:

1. The national airways system must be available to users 24 hours a day to accommodate the realities of today's cargo marketplace. As noted briefly above, much of the all-cargo operation occurs during nighttime hours. Shipments are picked up from businesses at the close of the business day; they are then flown to major hubs where they are sorted and placed on aircraft for delivery. This "sort" generally takes place in the hours around midnight and the delivery aircraft fly in the early morning hours to permit early next day delivery to consignees throughout the country. This activity requires that the national airways system be available to our members during these crucial nighttime hours. Past experience indicates that this unique cargo requirement is not always recognized by federal regulators. For example, until the all-cargo industry explained its problems to the FAA, computers were regularly "reprogrammed" (and therefore out of service) at precisely those times that cargo operations were at their peak. After a series of meetings on this issue, an accommodation was reached which was acceptable to both parties. If similar problems occur in the future, shippers will be inconvenienced by delays and future growth will be inhibited. Accordingly, it is absolutely necessary that:

A. The Federal Aviation Administration (or whatever entity is in charge of the future aviation system) must insure that the system is operational 24 hours a day, and

B. Adequate funding must be available to permit the FAA to provide all-night service.

2. **The cargo "set aside" in the AIP Program must be maintained**. 49 U.S. App. 2206(a)(2) provides that 3.5% of the AIP funds authorized be set aside for "cargo service airports", i.e. those airports served by all-cargo aircraft whose aggregate annual landed weight is in excess of 100 million pounds. This provision has been inserted in the AIP Program to insure that those airports with significant all-cargo operations have the funds available to provide for cargo infrastructure needs. In view of the growing importance of the all-cargo industry, this set aside should be retained in all future AIP Programs.

3. **The increasingly intermodal nature of the air freight business must recognized and provided for**. In the modern commercial marketplace, the movement of goods is becoming increasingly intermodal, with companies providing "seamless" transportation for the shipping public. Our members are now equipped to provide door-to-door transportation services using whatever mode is most efficient to deliver the cargo in the time frame requested by the customer. In order to insure that this trend continues, it will be necessary to provide an infrastructure that recognizes both air and ground components. The "black and white" difference that historically differentiated between air and ground movements has become less clear and it is relatively more difficult to determine who should finance the infrastructure of the gray area.

In our opinion, it makes little sense to play bureaucratic games over which pot of money is tapped to insure adequate intermodal connections. If contiguous landside development is

necessary for the movement of freight to and from airports, we have no problem with funding by the FAA. At the same time, we believe that such judgments should not be made in a vacuum but rather should be made only in accordance with a set of written guidelines which should be developed through normal federal rulemaking procedures to insure adequate public input.

Thank you again for the opportunity to testify before you today. I would be happy to answer any questions.

APPENDIX A

MEMBERSHIP LIST

AIR FREIGHT ASSOCIATION

COMPANY	CITY, STATE
Air Cargo Management Group	Seattle, WA
Air Courier Conference of America (ACCA)	Washington, DC
Airborne Express	Seattle, WA
AIT Freight Systems, Inc.	Elk Grove, IL
Alaska International Airport System	Anchorage, AK
American Cargo Handling Equipment	Denver, CO
American International Airways	Ypsilanti, MI
Arrow Airways, Inc.	Miami, FL
British Aerospace	Washington, DC
Burlington Air Express	Irvine, CA
Colography Group	Marietta, GA
Emery Worldwide, A CF Company	Palo Alto, CA
Express One International	Dallas, TX
Federal Express Corporation	Memphis, TN
FIDC/Fairbanks International Airport	Fairbanks, AK
Kitty Hawk Group	Dallas/Fort Worth, TX
The Campbell Aviation Group, Inc.	Alexandria, VA
Metropolitan Washington Airports Authority	Washington, DC
Northern Air Cargo	Anchorage, AK
Roadway Package Systems, Inc.	Pittsburgh, PA
Ryan International Airlines, Inc.	Wichita, KS
Southern Air Transport	Miami, FL
United Parcel Service	Louisville, KY
World Aviation Directory	Washington, DC

April 15, 1994

STATEMENT OF THE HONORABLE DAVID R. HINSON, FEDERAL AVIATION ADMINISTRATOR, BEFORE THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION, SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT, CONCERNING AVIATION INFRASTRUCTURE NEEDS. APRIL 28, 1994.

Mr. Chairman and Members of the Subcommittee:

I welcome the opportunity to appear before the Subcommittee today to discuss the FAA's aviation infrastructure programs. Accompanying me are Cynthia Rich, FAA's Assistant Administrator for Airports, and Martin Pozesky, Associate Administrator for System Engineering and Development.

As the Members of this Subcommittee know well, one of the most pressing needs in our air transportation system is the need for additional capacity to handle projected air traffic. The airport capacity of today will not meet the air transportation demands of tomorrow. We project, for example, that U.S. air carriers will increase their enplanements by about 60 percent by the year 2005, an average increase of 4 percent per year. In that same time, total aircraft operations at airports with FAA air traffic control services are expected to increase by 23 percent, or about 2 percent per year.

In 1991, 23 of our airports experienced more than 20,000 hours of airline flight delay each year; 33 airports may fall into that category by the year 2002 if no capacity improvements are made. It is readily apparent that without substantial improvements in system capacity, passengers and air carriers will face added costs and increased delays.

The FAA is responding to this challenge in many ways. The Airport Improvement Program (AIP), which is currently not authorized, permits us to assist in funding airport

capacity enhancement projects, such as the construction of new runways or terminal improvements. An additional funding source, passenger facility charges (PFCs), is contributing an increasing proportion of the costs of eligible projects. The conversion of former military air bases to civilian use provides a means of expanding civil capacity. Other capacity improvements require the development and use of new technology. More than three dozen programs, including the satellite-based Global Positioning System, are in progress at the FAA to provide that new technology.

The Airport Improvement Program has been the traditional means of Federal assistance to airports to provide additional capacity, and we are hopeful that a multi-year reauthorization bill for this program will be enacted soon. It is a major component of the financing necessary for airport planning and development, and it has provided the financial stability necessary for airports to obtain additional financing in the bond market for airport development. Historically, AIP assistance has provided about one-quarter to one-third of the funding for the capital investment in airport infrastructure, with bonds providing another third. The remainder is financed by other airport revenues and PFCs. The continued Federal presence provided by AIP funding remains important to support the annual public spending expected in the near-term for airport development.

I would like to take a moment to report to you on our AIP efforts of the last fiscal year. During FY 93, FAA issued 1434 grants. In FY 93, we devoted a record $715 million in AIP funds to capacity infrastructure development. Capacity enhancement projects at primary airports continued to receive priority consideration under the discretionary portion of the AIP program, where we can target funding.

We have also funded work to provide new, relocated or extended runways at a number of key airports throughout the country. Most of these runways are needed to accommodate

a gradual increase in activity due either to airline hub operations (such as at Dallas/Fort Worth and Salt Lake City) or the growing demands of metropolitan areas (such as Washington Dulles). Other projects, such as the one planned in Philadelphia, will increase capacity by permitting independent approaches to parallel runways during all weather conditions, which is not possible under the current configuration.

The Military Airport Program, established as a key component of the AIP, provides an important opportunity to add new capacity. FY 93 brought an additional four military airports into the program, for a total of twelve airports, as well as an increase in set-aside funding. There is substantial airport infrastructure available for conversion throughout the country, which can provide valuable added capacity to complement capacity efforts at current civil airports.

We also have recently reviewed our Letter of Intent (LOI) program. As a result, we have developed a proposed LOI policy that assures we use LOIs only to invest in airside development projects providing the best system-wide capacity benefits. This new policy proposes to allow funding for airside development projects. It will require more rigorous analyses of the sponsor's financial commitment and the benefit/cost ratio of the projects, especially given the limited amount of funds available for LOI projects. The policy will be published in the very near future for comment by all interested parties. The FAA intends to use this policy in considering all future LOI requests. However, no new LOIs can be issued until the FAA has enabling legislation.

We are implementing a program to enhance the AIP investment criteria. The program is ongoing. Ultimately, it will include goals and performance measures for a National Airport System that is fully consistent with the National Transportation System. In addition, we are currently considering various innovative financing mechanisms to

encourage more capital investments from the private sector to enhance the transportation infrastructure.

To supplement AIP grant assistance, many commercial service airports now have available to them an added source of funding -- PFCs, or passenger facility charges. As of April 1994, the FAA has approved a total of $9.3 billion in passenger facility charges throughout the country since collections began in June, 1992. When a large or medium hub airport imposes a PFC, its AIP entitlement funds are reduced by a set proportion. These funds, also known as "turnbacks," increase the amount of AIP discretionary assistance available to airports nationwide. Entitlement reductions increased our AIP discretionary funds by over $57 million in 1993, and are expected to exceed $100 million in 1994, depending on reauthorization legislation. Together, the AIP and PFC programs provide the investment in infrastructure that is so important to the economic well-being and growth of our air transportation industry. In addition, PFCs provide a predictable funding stream that gives airports the added flexibility they need for long-term planning and development projects.

We are also pursuing a variety of technological improvements that will add to the FAA's investment in the infrastructure, providing increased safety and efficiencies in our air transportation system. FAA continues to press for the development and exploitation of technologies that will increase system capacity, and for the installation of capacity-enhancing navigational aids and facilities. In FY 81, FAA developed the National Airspace System (NAS) Plan, which was the blueprint for modernization of the air traffic control system. Since that time, the FAA has issued a comprehensive statement of capital needs, known as the Capital Investment Plan (CIP). The CIP is based on a detailed capital planning process, and contains projects complementing the NAS Plan baseline program to update and maintain America's air traffic control system.

While the United States air transportation system operates very safely and efficiently, delays are a concern to aviation productivity, especially at the major hub airports. Although more than half of all delays are due to adverse weather, CIP investments can provide increased capacity through better use of air traffic control and management automation systems. The continuing growth in the volume and complexity of aircraft operations will place unprecedented demands on the NAS through the turn of the century. The 1993 Capital Investment Plan describes the FAA's efforts to prepare for these increasing demands by investing in infrastructure modernization. Users of the NAS system will benefit from improvements in flight services, more efficient routing, reduced delay, and enhanced safety.

Overall, we have made substantial progress in implementing the CIP, and many of our major efforts have begun to deliver tangible benefits to today's passengers. Over 85 percent of the systems covered by the NAS plan have been delivered to the field, including 183 radars, 273 airport surface observing systems, and 110 low-level wind shear alert systems. The benefits realized since 1981 total $35 billion in 1992 dollars. These benefits come from minimizing delays caused by air traffic congestion and down-time of old, obsolete equipment. These improvements have led to savings in FAA operations and maintenance expenses, and increased productivity for air carriers.

To meet worldwide air traffic demands, fundamental technologies and procedures of the future system must be global. Satellite technology, for example, will become an increasingly attractive option for providing regional and worldwide services. For this reason, the 1993 CIP reflects a new policy direction for the NAS: our accelerated commitment to a satellite-based navigation system that uses the global positioning system (GPS) as its foundation. GPS is now an operational part of the U.S. air traffic control

system. FAA has certificated the first two GPS signal receivers for oceanic, domestic en route, terminal, and non-precision approaches. And Department of Defense specifications for initial system operation have been accepted by the FAA for civil aviation purposes. In the future, aircraft will relay positional signals from their GPS receivers to ground stations, increasing safety and accuracy, and reducing costs of aircraft operation. Airlines will save millions of dollars each year in fuel costs.

In closing, Mr. Chairman, I would like to stress that the FAA shares your concern for ensuring that there is adequate infrastructure to support the projected growth in air transportation well into the next century. We are working on ways to expand airport capacity through AIP-funded projects. And we are investigating the technological improvements necessary to ensure that our air traffic control system remains the world's safest and most efficient.

That completes my prepared statement, Mr. Chairman. I would be pleased to respond to any questions you may have at this time.

THE
NATIONAL
INDUSTRIAL
TRANSPORTATION
LEAGUE

PREPARED STATEMENT OF MICHAEL S. KING

TESTIMONY

OF

THE NATIONAL INDUSTRIAL TRANSPORTATION LEAGUE

BEFORE THE

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

U. S. HOUSE OF REPRESENTATIVES

ON

AVIATION INFRASTRUCTURE NEEDS

APRIL 28, 1994

1700 North Moore Street, Suite 1900 • Arlington, Virginia 22209-1904 • (703) 524-5011 • (703) 524-5017 (fax)

Chairman
Roger W. Wigen
Manager of Transportation
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3M

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Introduction

Hello, my name is Michael S. King. I am the freight and transportation manager for TRW Vehicle Safety Systems. I am also chairman of The National Industrial Transportation League's Air and Business Transportation Committee. The League welcomes the opportunity to provide its views relative to shippers' needs on the nation's aviation infrastructure. The League is the oldest and largest broad–based national association representing shippers. League members include many of the largest industrial and commercial concerns in the United States, as well as numerous smaller shippers. The League also represents groups and associations of shippers in national and international commerce. Our members are substantial users of all modes of transportation, including air transportation. League members export and import substantial quantities of products from points all over the world and therefore are greatly affected by air transportation. Stated simply, League members are the customers of the air transportation system.

Air transportation is playing an increasingly important role for today's transportation professional. Reductions in costly warehouse inventories, increased emphasis on intermodal transportation, and the overriding need to move a company's product in the most efficient and cost effective manner possible means that air transportation is becoming more a necessity rather than a luxury.

Air cargo traffic in 1993 grew faster than air passenger traffic according to preliminary estimates of the International Civil Aviation Organization. Reports from airlines representing ICAO's member countries indicate air cargo traffic grew six percent while passenger traffic rose by only one percent. This is part of a long term trend which shows that the air–cargo carrier industry has grown from a base of virtually zero in 1977 to a $20 billion annual business today.

The evolving importance of air transportation and its increasingly important role for today's shipper is a part of a natural progression in transportation. From the nation's early days of developing seaports, to the creation of the canal system which helped advance the industrial revolution, to the introduction of railroads which opened up this country's interior to manufacturing and trade and most recently to the creation of the interstate highway system which has made almost every area of the country accessible, new and better ways of serving domestic and world markets have been a major success in fostering the U.S. economy.

Air transportation will be an integral component for U.S. businesses in reaching future world markets. As the U.S. increases its role in international trade, no mode, other than air transport, is better equipped to meet the economic necessities of a coming era. Global sourcing, seamless movements and just–in–time logistics will require that manufacturers receive and ship products more frequently and more rapidly over long distances. According to several studies, air freight accounts for nearly one–third of the value of U.S. products exported. And this percentage is expected to increase over the course of the 1990s.

Investment in U.S. Aviation Infrastructure

Now that more freight shippers are considering air carriage in their transportation planning, it is critical that the nation's aviation infrastructure be maintained, and improved to meet expected new demands. In addition to the facilities used jointly by all types of carriers (air traffic control, runways, terminal facilities, taxiways, etc.), the unique needs of the air cargo industry should not be overlooked in the funding process. In accordance with the provisions of 49 U.S. App. 22306(a)(2), 3.5

percent of Airport Improvement Program grants are set aside for airports handling a specific minimum level of freight. It is absolutely essential that this specific set–aside is continued and/or possibly increased. Funds flowing to such airports under this set–aside program should be used on cargo–related projects.

Legislation currently pending in the Senate, S. 1491 and H.R. 2739, which passed the House last year, would authorize funding for research, emergency and improvements to the nation's aviation infrastructure. H.R. 2739 is supported by the League since it specifically provides for: allocation of funds for the Federal Aviation Facilities and Equipment Program; increased minimum funding for integrated airport system planning; and, the unlimited use of discretionary funds for terminal development at primary airports enplaning up to 0.5 percent of total U.S. enplanements (small airports). It also requires the U.S. Secretary of Transportation to receive assurances that the airport owner or operator is reporting on the amount of funds the airport pays to other governmental units for all services and property provided to other governmental units and the amount of compensation received.

Utilization of monies for non–airport related purposes is of particular interest and concern for U.S. shippers. In recent months considerable attention has been given to the escalating landing fees charged by some airports to airline carriers. While the League supports the institution of these fees for the purpose of reinvesting them into the airport's infrastructure, the League opposes their use for non–aviation purposes. It is within this context that the League supports an amendment to S. 1491 that establishes a definition of what constitutes a "reasonable" rate. This amendment would require airports to consider all revenue sources and surpluses before charging fees. It would also require that the Department of Transportation issues formal rules to determine what a reasonable rate is and to establish a dispute–setting process.

In defining non–aviation purposes it should be pointed out that the League does not wish to preclude the use of funds for such things as airport access roads, or programs for the acquisition of adjacent property necessary for airport expansion or related activities. Both would facilitate the free flow of commerce. These uses are as critical to shippers needs and must not be forgotten in planning for and meeting this nation's present and future transportation requirements.

The League believes that proper justification for this amendment is contained in the attached report to the House Committee on Appropriations entitled "Diversion of Airport Revenues from Commercial Air Service Airports in the United States, December 1993."

Intermodal Connections in The Airport Planning Process

Intermodal capabilities in the airport planning process is absolutely critical for successful freight operations. One provision that has been proposed for inclusion in S. 1491 would help in accelerating improvements in the nation's intermodal capabilities. The amendment would deregulate the intrastate activities of all "intermodal all–cargo carriers."

As proposed, this amendment would amend the *Federal Aviation Act* and would deregulate related intrastate motor carrier operations. It covers rates, routes, and services of intermodal carriers transporting "property, pieces, parcels, or packages." More importantly, it defines an intermodal all–cargo air carrier as "an air carrier (including an indirect air cargo air carrier) that undertakes to provide the transportation described in section 105(a)(4) or any other carrier having authority to provide transportation which is affiliated with an air carrier through common ownership."

The amendment tracks the decision of the 9th Circuit Court of Appeals in a decision issued last year finding that integrated air package express companies are exempt from California state regulation. Recently, the state of Texas adopted the 9th Circuit ruling. If enacted, this amendment would broaden these rulings to encompass the entire country and expand it by including all direct and indirect intermodal all–cargo air carriers (see attached letter).

The ultimate decision as to who qualifies as an indirect cargo air carrier rests with the Department of Transportation. A spokesman for DOT stated that their criteria defines an indirect cargo air carrier as any U.S. citizen who undertakes to engage directly in air transportation of property, and uses for the whole or any part of such transportation, the services of an air carrier.

The action being proposed in Congress would bring about efficiencies for both shippers and carriers across the country. By expanding the definition to include all direct and indirect cargo air–carriers, the playing field will be open to all carriers. The result of these reforms, if enacted, will be increased options for shippers.

Removing state regulations which pose barriers to the free flow of commerce will place an added stimulus on airport planners to ensure that their designs allow for a smooth transition between the various modes.

Conclusion

Increasing pressures on U.S. companies to be competitive in the world marketplace requires that the nation has an aviation infrastructure in place to meet these needs. "Seamless Transportation" is a popular phrase today to describe the types of service that today's consumers demand. Shippers in the 1990's are requiring carriers to incorporate various modes so as to provide the best possible service. Our transportation infrastructure planning must include the special needs of each mode and how they integrate.

Investments in our airfreight infrastructure is crucial as shippers utilize it more frequently for daily usage and not just for emergency or rush freight. Delays in building and expanding airports, access road congestion, lack of space utilization for staging and loading will all translate into increased transportation costs to shippers and inhibit our ability to successfully compete in the world marketplace.

I thank the Subcommittee for the opportunity to appear before you, and I will be happy to address any question you may have.

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A REPORT TO

THE COMMITTEE ON APPROPRIATIONS

U.S. HOUSE OF REPRESENTATIVES

on the

DIVERSION OF AIRPORT REVENUES FROM COMMERCIAL AIR SERVICE AIRPORTS IN THE UNITED STATES

Surveys and Investigations Staff

December 1993

NOT FOR RELEASE UNTIL AUTHORIZED BY THE COMMITTEE

December 8, 1993

MEMORANDUM FOR CHAIRMAN NATCHER

RE: Diversion of Airport Revenues from Commercial Air Service Airports in the United States

By letter dated May 26, 1993, the Committee directed that an investigation be made of the diversion of airport revenues from commercial air service airports in the United States and the extent to which such airports received Federal grants.

The investigation has been completed and the results are included in this report.

Respectfully submitted,

R. W. Vandergrift, Jr.
Chief of the Surveys and
Investigations Staff
House Committee on Appropriations

H.C. Young
Assistant Director
Surveys and Investigations Staff
House Committee on Appropriations

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SUMMARY

Background

Most U.S. airports are owned, operated, and sponsored for Federal Aviation Administration (FAA) grants by states, counties, cities, or regional authorities. Their operations are funded from a variety of sources including airline landing fees and terminal rents as well as non-airline revenue such as automobile parking, hotel, and terminal concessions. In addition to revenue bonds and airport generated revenue, airport capital improvements are funded by Federal grants under the Airport Improvement Program (AIP) and user fees levied on air travelers called Passenger Facility Charges (PFC's).

After World War II, the Government embarked on a grants-in-aid program to promote the development of a national airport system. The Department of Transportation (DOT), through the FAA, implements this development through grants to state and local governments for airport development, planning, and noise compatibility programs. The current program was established by the Airport and Airway Improvement Act of 1982 (AAIA). Grants are made to airport sponsors, defined by FAA as public agencies or private owners of public-use airports requesting funds under provisions of the AAIA. In accepting a grant, the sponsor agrees to comply with certain grant conditions called assurances including those aimed at restricting the use of airport revenues for aviation purposes.

AIP Funding

AIP grants are characterized by FAA as either entitlement grants, which are awarded to sponsors by formula based on the number of enplaning passengers, or discretionary grants which generally can be used at any airport. A sizeable portion of the discretionary grants is set aside, however, to achieve specific funding minimums for certain types of airports such as reliever airports, smaller commercial airports, and to fund programs for noise abatement, capacity enhancement and safety. The Airport and Airway Trust Fund is the depository for AIP revenue which is collected from airline ticket taxes, aviation fuel taxes, and other fees. Since 1982, over $14.5 billion in AIP grants have been awarded for 14,000 projects. For FY 1994, Congress appropriated $1.69 billion from the trust fund for the AIP.

Passenger Facility Charges vs. Airport Improvement Program Grants

The use of PFC's began in 1990 and are the newest revenue source for airport capital development and improvement. PFC's are levied on the air traveler and collected by the airlines. PFC funded projects are intended to preserve or enhance safety,

security, capacity, and reduce noise or enhance competition among carriers. Permission to impose a PFC requires FAA approval. PFC funds allow airports to pay for projects as they are being built with less direct Federal controls on the use of the funds. PFC legislation provides for a reduction in AIP grants if an airport is collecting a PFC. According to FAA data, as of September 30, 1993, 145 airports were granted approval to collect $8.2 billion in PFC's over the next several decades. Numerous additional applications are pending approval to collect another $1 billion.

FAA officials and industry representatives agree AIP funds and PFC revenue are used for the same purpose, namely airport development and improvement. However, PFC revenue is retained at the airport while AIP funds are derived from Federal taxes paid to the Government which are re-distributed to the airports. The revenue basis for both is the flying public. One airport official viewed AIP grants as "Government handouts" and another commented airports should not receive AIP grants if they have the capital resources to pay for their own projects.

Legislation

AAIA legislation requires the Secretary of Transportation to be assured before awarding grants that all airport generated revenue and any local taxes on aviation fuel (other than taxes in effect on December 30, 1987) be expended for airport operations, the local airport system, or other facilities owned or operated by the owner or operator of the airport. Also, this airport revenue must be used on activities directly and substantially related to the actual air transportation of passengers or property. No similar requirements exist in the PFC application process.

The AAIA, however, also specifically excepts sponsors from this revenue retention requirement, where (1) the airport sponsor's debt obligation or financing statutes were issued or enacted prior to September 3, 1982 and (2) the sponsor requires airport revenue to either support the general debt obligations of the sponsor or support other sponsor facilities. Therefore, by accepting an AIP grant, the sponsor agrees to retain airport generated revenue at the airport and to maintain the airport as self sustaining as possible.

Oversight

According to the AAIA, the Secretary of Transportation is responsible to ensure compliance with the Act's requirements. The authority to implement the Act was delegated to FAA. However, FAA officials acknowledged they have not provided the oversight necessary to determine if airport sponsors are complying with AAIA provisions. Moreover, there is no DOT/FAA policy establishing a uniform procedure to determine whether sponsors

claiming an excepted status are in fact excepted from the AAIA revenue retention provisions and thus are allowed to divert airport revenue for non-aviation purposes. FAA officials stated FAA has neither the resources nor the expertise to monitor this requirement and considers revenue compliance to be its lowest priority. Instead, for oversight FAA relies on: (1) sponsor compliance self-certification, (2) audits by independent accounting firms pursuant to the Single Audit Act of 1984 (SAA), and (3) DOT Office of Inspector General (OIG) audits, including those generated by third party complaints from airlines. The DOT OIG is the only Federal office reviewing the use of airport revenue by airport sponsors.

According to OIG officials and confirmed by this investigation, FAA's enforcement methodology is ineffective to ensure airports are in compliance with AIP grant assurances and the AAIA. The OIG has conducted audits of the AIP and issued 22 reports on FAA's monitoring of airport revenues at various airports. Among its findings, the OIG highlighted that FAA grant oversight is inadequate to ensure airports and their sponsors adhere to airport revenue grant assurances. In 15 of their 22 reports the OIG has documented that airports have lost approximately $76 million in revenue because sponsors and airports have failed to comply with the AAIA.

The primary tool used by FAA to monitor the revenue requirement is the SAA. The Act requires an audit by an independent accounting firm of any state or local government which receives $100,000 or more in Federal funds. It was established to insure all Federal agencies rely on a single audit with uniform requirements. Generally, the SAA audits disclose no material findings or internal control weaknesses and are ineffective in identifying revenue diversion. According to accounting firm representatives and OIG officials, SAA audits are too broad in scope and do not sufficiently test transactions to detect diversion. Moreover, they fault FAA for its failure to suggest appropriate audit steps and to provide updated compliance procedures.

Also, according to FAA officials, the majority of complaints on revenue diversion come from airlines. Airlines have a direct financial interest in detecting revenue diversion because it usually results in higher landing fees and other charges. Consequently, airline representatives generally follow revenue diversion closely. However, several commented that FAA is not responsive to their concerns and is not providing any program oversight to deter revenue diversion. One senior regional FAA official stated it would be a "waste of time" for the FAA to devote resources to this issue because it is a matter between airlines and airports, not between FAA and airport sponsors. FAA is empowered to withhold AIP funds if an airport diverts revenue; however, it has never done so. According to FAA officials, even when improper diversions are identified, FAA has not

withheld AIP grants because the AAIA is too difficult to enforce.

Diversions

Thirty airport sponsors responsible for 33 airports were visited during this investigation. They were selected based on either (1) the large number of enplaning passengers, (2) the amount of AIP grants they received, or (3) information from airline representatives and Government officials on possible revenue diversion. Airport and Government officials stated and analysis in this investigation confirmed, diversions of airport generated revenue in contravention of AAIA and grant assurances, are more likely to occur at airports owned by municipalities where the airport manager works directly for the city manager or mayor. They noted that some airports are financially successful, although owned by cities experiencing financial problems. This establishes an environment in which city leaders view their financially successful airport as a "cash cow" capable of solving the city's budget deficit. For example, the City of Los Angeles and the airlines continue to be involved in a legal dispute over increased landing fees. Airline officials argue the increased landing fees are not supportable but will enable the airport to divert airport funds to the city to pay for other city services. According to DOT and airline officials, the methods used to divert airport revenue in contravention of grant assurances and AAIA provisions vary, but usually take the form of excessive payments for administrative support, or as payments in lieu of taxes.

Since 1982, 17 of the 33 airports surveyed received approximately $900 million in grants while diverting in the same period almost an identical amount. Industry representatives and Government officials related airport revenue is diverted under three sets of circumstances: (1) where the DOT Office of General Counsel (OGC) determined the diversions were proper because the airport sponsors are excepted--$641.3 million, (2) where the sponsor's exception is self-proclaimed--$140.8 million, and (3) where the sponsors did not appear to meet the statutory exception--$111.7 million.

As articulated in the U.S. Senate Conference Report describing the 1982 amendments to the AAIA, the legislative history of the Act discloses Congressional intent was to apply the revenue exception only to ports authority; however, the DOT OGC concluded such a restrictive interpretation would be inequitable. Consequently, the DOT OGC adopted a "plain meaning" interpretation of AAIA which applies the exception to all airport sponsors having financing statutes or debt obligations in effect before September 3, 1982 and which requires airport revenues to support the debt obligations or other facilities of the sponsor. Thus far, the DOT OGC has determined four airport sponsors are excepted: the state of Hawaii; the city of Saint Louis, Missouri;

Massachusetts Port Authority; and the Port Authority of New York and New Jersey. The OIG had requested opinions from the DOT OGC on the legality of the diversions by Hawaii, Saint Louis, and the Massachusetts Port Authority. The DOT OGC concluded the Port Authority of New York and New Jersey was excepted based on the legislative history of the AAIA.

According to a DOT official, Hawaii was the first airport sponsor diverting revenue to be excepted by DOT which was not a port authority. Hawaii had a state requirement to transfer 5 percent of airport revenue to the general fund for indirect administrative costs. This diversion enables Hawaii to support its other facilities. Rendering an initial opinion that Hawaii was not excepted from the revenue retention requirements, the DOT OGC reversed itself after aggressive intervention by the state and one of its U.S. Senators. The DOT OGC issued a second opinion that the state was excepted, and, as such, could divert revenues to any facility it owns. Moreover, the DOT OGC agreed with Hawaii that the facility receiving the diverted funds need not be transportation related. Consequently, according to airport officials, from July 1989 to June 1993, $54.7 million in excess of supportable indirect costs was diverted.

Additionally, in 1990, Congress permitted Hawaii under certain conditions to transfer $250 million in airport generated revenues for non-aviation purposes on a one-time basis. Neither FAA nor Hawaii's airport division is monitoring compliance with the Congressional conditions attached to the transfer. A DOT official conceded that the Hawaii precedent opens the flood gates for further diversions. Thereafter, the Saint Louis decision allowed the city to divert $8.9 million to its general fund.

Four other sponsors were visited who claim they are excepted from the AAIA provisions. None is authorized to do so by DOT; however, the DOT OGC is reviewing, at the request of the OIG, the excepted status of Maryland and San Francisco. Both are non-port authority sponsors. Since 1981, as the result of an agreement with the airlines, the city of San Francisco has diverted $119 million from its airport in the form of annual service payments even though no documentation has been provided by the city to support such large payments. Also, Maryland requires all state owned transportation facilities including the airport to be operated and financed through a transportation trust fund. This results in commingling of all transportation revenue and a diversion of airport revenue.

Eleven additional sponsors were visited who diverted airport revenues or plan to divert such revenue. These diversions are the result of improper charges for indirect services, charitable contributions, commingling of airport revenue with other city funds, and payments in lieu of taxes. For example, since July 1990 the city of Chicago has diverted approximately $2.9 million

of O'Hare's revenue to defray the cost of homeless individuals. According to airport officials, the airport was an "authorized warming station" for the homeless and the problem had reached crisis proportions. The city established an outreach program off the airport's premises but financed it as an operations and maintenance expense of the airport. Additionally, the city of Philadelphia as the result of a fiscal crisis, diverted $98 million from the airport to the general fund. Until 1991, the city commingled its airport fund with other city funds allowing the advances of airport revenue to support other city activities. After the airlines objected, this practice was terminated and the money was repaid.

In addition to the aforementioned methods of airport revenue diversion, according to airport officials, state and local authorities are imposing various taxes on airport fuel, transportation, retail sales, food and beverage, and parking. Some are discriminatory and levied exclusively on airport activities. In this regard, an official of DOT argued that when Congress amended the AAIA in 1987 to retain aviation fuel taxes at the airport, and by exclusively identifying this tax, it implied any other taxes on aviation services and facilities were permissible.

I. INTRODUCTION

A. Directive

By letter dated May 26, 1993, the Committee directed an investigation be made of the diversion of airport revenues from commercial air service airports in the United States and the extent to which such airports received Federal grants.

B. Scope of Inquiry

The investigation was conducted through interviews and examination of records in Washington, D.C. at the Department of Transportation (DOT), its Office of the General Counsel (OGC), Office of Inspector General (OIG), and Federal Aviation Administration (FAA); and at eight FAA regional offices. Interviews were also conducted with representatives from the Air Transport Association of America (ATA), Airports Council International, American Association of Airport Executives, and with representatives at five major U.S. airlines.

Thirty airport sponsors responsible for 33 airports were visited during this investigation. They were selected based on either (1) the large number of enplaning passengers, (2) the amount of AIP grants they received, or (3) information from airline representatives and government officials on possible revenue diversion. Field visits were made and interviews conducted with airport, city, state, and county officials at the following locations: Phoenix, Arizona; Burbank, Irvine, Los Angeles, Oakland, Palm Springs, San Diego, San Francisco, and San Jose, California; Denver, Colorado; Washington, D.C.; Miami and Tampa, Florida; Honolulu, Hawaii; Indianapolis, Indiana; Chicago, Illinois; New Orleans, Louisiana; Baltimore, Maryland; Boston, Massachusetts; Detroit, Michigan; Saint Louis, Missouri; Albany, Buffalo, and New York, New York; Philadelphia, Pennsylvania; Providence, Rhode Island; Austin and Houston, Texas; Seattle, Washington; and Milwaukee, Wisconsin.

C. Background

Most U.S. airports are owned, operated, and sponsored for FAA grants by states, counties, cities, or regional authorities. Airport operations are funded from a variety of sources including bonds and other airport generated revenue such as landing fees and terminal rents paid by airlines as well as non-airline revenue such as automobile parking, hotel, and terminal concessions. In addition to revenue bonds and airport generated revenues, airport capital improvements are funded by Federal grants and by user fees levied on travelers called Passenger Facility Charges (PFC's).

After World War II, the Government embarked on a grants-in-aid program to promote the development of a system of airports to meet the Nation's needs. DOT, through FAA, promotes the development of a national system of airports by providing Federal grants to state and local governments through the Airport Improvement Program (AIP). The current program was established by the Airport and Airway Improvement Act of 1982 (AAIA). The Secretary of Transportation awards grants for airport development, planning, and noise compatibility programs. The grants are made to airport sponsors, defined by FAA as a public agency or private owner of a public-use airport requesting funds, under the provisions of AAIA. A sponsor must be able to assume and carry out the terms of the grant, including the assurance an airport is to retain its airport generated revenues. A commercial service airport is defined as a public airport which enplanes 2,500 or more passengers annually and has scheduled passenger services. For FY 1994, Congress appropriated $1.69 billion for AIP.

The PFC is the newest funding source for airport improvement projects such as runways and parking lots. PFC revenue is derived from a charge placed on enplaning passengers and is collected by airlines for airports; however, the authority to impose the charge requires FAA approval.

Diversion occurs when revenue generated by the airport is taken by the sponsor and used for non-aviation purposes. Based on a DOT OGC opinion, FAA has determined four sponsors can legally divert such revenue because they are excepted from AAIA provisions. Officials from several other airports included in this study also believe they are excepted and, therefore, are diverting such revenues; however, the OGC has not provided an opinion on the application of the statutory exception. Also, some sponsors admit they are diverting airport revenue to pay unsupported costs, while others are overcharging for indirect costs.

II. AIRPORT IMPROVEMENT PROGRAM FUNDING, LEGISLATION, COMPLIANCE, AND OVERSIGHT

A. Airport Improvement Program Funding

The Airport and Airway Trust Fund, established by the Airport and Airway Revenue Act of 1970, provides the revenues to fund AIP grants for airport projects. The trust fund consists of taxes or user fees collected from various segments of the aviation community such as a 10 percent tax on airline tickets, a 6.25 percent tax on freight waybills, aviation fuel taxes, and a $6 international departure fee. The trust fund guarantees a stable AIP funding source.

A portion of AIP grants is distributed in accordance with a formula contained in the AAIA, as amended. These grants are referred to as apportionments or entitlements and not more than 49.5 percent of the funds are apportioned to the owners or operators of primary airports and cargo service airports. Entitlement grants are apportioned to airports according to the number of enplaning passengers. Primary airports are commercial service airports which enplane 10,000 or more passengers annually. Cargo service airports are those served by aircraft providing air transportation of only property with an annual aggregate landed weight in excess of 100 million pounds. Although not defined in the AAIA, general aviation airports comprise the largest single group of airports in the U.S. airport system. These are the airports that remain after exclusion of the commercial service and primary airport categories.

The remaining discretionary grants are generally for use at any airport; however, a sizable portion is set aside and must be used to achieve specified funding minimums for certain airport categories and programs such as noise compatibility, enhancing capacity, and safety.

The Federal share of an AIP project at primary airports is 75 percent. At the remaining airports, the Federal share is generally 90 percent of the total allowable project cost. The following table shows approximately $14.5 billion in AIP grants have been made for over 14,000 projects from FY 1982 through FY 1993:

Airport Improvement Program Grants FY 1982 Through FY 1993 ------$ In Millions------				
Fiscal Year	Discretionary	Entitlement	Total	Number of Projects Funded
1982	$154.6	$303.8	$458.4	642
1983	394.0	398.5	792.5	1,083
1984	349.8	471.7	821.5	1,101
1985	389.7	559.5	949.2	1,157
1986	339.3	518.9	858.2	1,079
1987	421.9	472.9	894.8	1,168
1988	590.8	874.2	1,465.0	1,242
1989	593.1	821.3	1,414.4	1,251
1990	617.0	791.7	1,408.7	1,150
1991	875.6	894.0	1,769.6	1,402
1992	988.2	759.6	1,747.8	1,506
1993	1,020.5	861.4	1,881.9	1,434
TOTAL	$6,734.5	$7,727.5	$14,462.0	14,215

B. Legislation

Section 511(a)(12) of the AAIA, Public Law 97-248, codified as amended, 49 app. Section 2210 (a)(12), requires the Secretary of Transportation to be assured before providing AIP grants that:

> "all revenues generated by the airport, if it is a public airport, and any local taxes on aviation fuel (other than taxes in effect on December 30, 1987,) will be expended for the capital or operating costs of the airport, the local airport system, or other local facilities which are owned or operated by the owner or operator of the airport and directly and substantially related to the actual air transportation of passengers or property; * * *."

The AAIA also provides an exception to the revenue retention requirement, where the debt obligation or financing statutes of the airport sponsor provide for use of airport revenues to support the general debt obligations or other facilities of the sponsor (excepted from complying):

> * * * * except that if covenants or assurances in debt obligations **issued before September 3, 1982 [emphasis added]**, by the owner or operator of the airport, or provisions enacted before September 3, 1982, in the governing statutes controlling the owner or operator's financing, provide for the use of the revenues from any of the airport owner or operator's facilities, including the airport, to support not only the airport but also the airport owner or operator's general debt obligations or other facilities, then this limitation on the use of all other revenues generated by the airport (and in the case of a public airport, local taxes on aviation fuel) shall not apply;*

Sponsors in accepting AIP grants for other than planning, must also make certain commitments which continue after the capital project has been financed. The commitments are set forth in grant assurances which an airport sponsor must accept as a condition prior to approval of the grant. Two of the 36 assurances for an airport development project incorporate AAIA provisions and require: (1) the airport maintain a fee and rental structure that will make the airports as self-sustaining as possible, and (2) all airport generated revenues will be expended by the airport for the capital or operating costs of the airport. Failure to comply with the assurances may result in grants being withheld by FAA.

The requirement to maximize airport self-sufficiency is also mirrored in the Surplus Property Act. The Government has donated surplus property to airports to use for revenue production purposes to finance airport operations. Sponsors who receive donated land must adhere to additional revenue compliance requirements.

C. Methods Typically Used to Divert Airport Revenues

According to airport and airline officials, any diversion of airport generated revenue is more likely to occur at airports owned by cities where the airport manager reports directly to a city manager or mayor. Some airports are financially successful while the cities that own them may well experience critical financial problems. This creates a condition where political leaders view their successful airports as "cash cows." Sponsors can legally divert such revenue if they are excepted from complying with AAIA revenue retention provisions. Otherwise, such diversions are in violation of the law and grant assurances.

A DOT official describes diversion, legal and illegal, as the transfer of airport revenue not commensurate with services received from the sponsor. Diversion also occurs when revenue is

lost because airports charge non-airport related entities (e.g., a city government entity) less than full market value for leased space or property. According to the official, diversions by sponsoring cities occur in various ways but generally happen under one or more of the following methods:

1. Excessive Payments for Indirect and Direct Costs

Cities provide administrative support for indirect services such as attorneys and for personnel and procurement support to the Department of Aviation which operates the airport. Such services are provided to all city departments and costs are allocated to each pursuant to a formula. According to the FAA AIP Handbook, indirect costs are allowable only if the airport sponsor has a cost allocation plan. However, a misapplication of the formula can result in a disproportionate share of funds being paid by the airport's aviation fund to the city's general fund. Cities also provide services to airports such as police and fire protection. The charges are to be based directly on actual usage. Assessment of fees in excess of the services provided results in a diversion of revenue to the general fund.

2. Payments in Lieu of Taxes

As a municipal entity, airports are exempt from the payment of taxes. However, some cities impose fees on their airports in lieu of taxes. According to a DOT official, if the city does not provide a documented service for the fee, a diversion results.

D. Oversight and Compliance

The Secretary of Transportation is responsible, according to AAIA Section 2210(b), to ensure compliance with the Act's requirements. In September 1982, the Secretary delegated to the FAA Administrator, on a temporary basis, authority to implement AAIA including the requirement that airport revenues be retained exclusively for airport purposes. According to a DOT official, this authority has never been made permanent nor published in the Federal Register. To ensure compliance with the AAIA, FAA officials advised they have relied on: (1) sponsor self-certification, (2) single agency audits, and (3) third party complaints and DOT OIG audits.

1. Sponsor's Self-Certification

The AAIA authorizes the Secretary of Transportation to require sponsors to certify they will comply with statutory and administrative requirements. DOT OIG data show FAA decided to place greater reliance for satisfying grant assurances on sponsors through mandatory self-certification procedures. By signing

an AIP project preapplication, application, and grant agreement, the sponsor establishes his obligation to comply with Federal grant terms and conditions. According to FAA, it is a means of focusing sponsors' attention on specific requirements and making them more knowledgeable and diligent in assuring their grant obligations are satisfied. Sponsor certification guidance is contained in the AIP Handbook (FAA Order 5100.38) issued in October 1989 which states: "Failure to comply with grant conditions may result in suspension or termination of the grant."

According to the Code of Federal Regulations, grantees (city, state, etc.) are responsible for managing the day-to-day operations of grant and sub-grant supported activities, and must monitor them to assure compliance with applicable Federal requirements and that performance goals are being achieved. Grantee monitoring must cover each program, function, or activity.

2. Single Audits

Office of Management and Budget Circular A-128 provides guidance for implementing the Single Audit Act of 1984 (SAA) and establishes audit requirements for state and local governments receiving Federal aid. Any state or local government which receives $100,000 or more a year in Federal funds is to be audited in accordance with the circular. The single audit concept was established to: (1) ensure all Federal agencies rely on a single audit, (2) provide uniform requirements for audits of Federal assistance programs, and (3) improve financial management of Federal assistance programs. The circular requires the audit be conducted by an independent auditor and covers the entire financial and compliance operations of that government body. The responsibility for a single audit is shared by the state and local government and the cognizant Federal agency. The DOT OIG is responsible for ensuring audits are in accordance with OMB Circular A-128.

The DOT OIG audits of airport revenue accountability show single agency audits of sponsors are generally ineffective in discovering failure to comply with AAIA. Most OIG reports state that audits of the sponsor required by the Single Audit Act of 1984 were performed by an independent public accountant for each fiscal year of the audit period. However, no material findings or internal control weaknesses were reported.

According to a senior OIG official, this situation occurs because single audits are too broad in nature. Their main purpose is to determine: (1) whether the sponsor's/airport's financial statements present fairly the financial position and results of their operations and, (2) if internal control systems are in place and provide reasonable assurance that Federal financial programs are being managed in compliance with applica-

ble laws and regulations. While audits generally determine whether Federal grants are properly accounted for, they often fail to determine if airport generated revenues are being diverted in violation of the AAIA and the sponsor's grant assurances.

The FAA AIP Handbook and Advisory Circulars provide program guidance and compliance requirements. However, according to airline officials and a certified public accountant conducting single audits, FAA needs to improve its guidelines by providing current compliance procedures and suggested audit steps. Moreover, these officials advised that public accounting firms conducting audits should be required to certify whether or not the sponsor has complied with its grant assurances and to identify the extent of any diversions of airport revenues.

In September 1993, the President's Council on Integrity & Efficiency produced a report entitled *Study on Improving the Single Audit Process*. It contains 77 recommendations for improving the single audit including 38 recommendations for improving the compliance supplement, compliance requirements, internal controls, and compliance testing.

3. Third Party Complaints

According to FAA officials, the majority of complaints regarding diversion emanate from airlines which have a direct interest in detecting diversion of revenue from the airport. Financial agreements between airlines and airport operators specify how the risks of running an airport are shared. In many instances, airlines collectively assume financial risk by agreeing to pay costs not allocated to other users. In such instances airport revenue diversion results in airlines paying higher landing fees and other charges.

According to several airline officials, generally FAA is not: (1) responsive to airline complaints of diversions, (2) providing any AIP oversight, and (3) enforcing AAIA and grant assurances. A senior FAA regional official commented his region does not devote any resources to look for diversion of airport revenue since he does not believe it is a problem in the region. The official stated, since the airlines have access to airport financial records, it is to the airlines' financial benefit, not FAA's, to monitor the use of airport revenues. According to the official, FAA would be wasting time to devote resources to ensure there is no airport revenue diversion.

Numerous FAA officials admitted they have not provided the oversight necessary to determine: (1) if airport sponsors are complying with AIP provisions, and (2) which sponsors are excepted under the AIP to legally divert airport generated revenues for non-aviation purposes. FAA officials commented such oversight is lacking because they have neither the resources nor expertise to

monitor the generation and use of airport revenues and compliance with the AAIA. The officials advised compliance issues generally are at the "bottom" of FAA's priorities, safety being the highest priority and construction quality being the second. Each FAA region has a designated individual for compliance issues, but only as a collateral duty. This generally translates into half-a-person per region to address such issues.

The DOT OIG is the only Government office reviewing the use of airport revenue. The OIG has conducted audits of the AIP for the Secretary of Transportation and has issued 22 reports on FAA's monitoring of airport revenues at various U.S. airports. Generally, the OIG found FAA grant oversight was inadequate to ensure airports and their sponsors adhered to airport revenue grant assurances. For example, the OIG determined that airport sponsors needed to improve their internal controls over airport land rental and expenditures to ensure compliance with FAA airport revenue retention requirements. Many sponsors did not maintain fee and rental structures to make their airports as self-sustaining as possible, or ensure airport revenues were used only for airport purposes. According to OIG officials, no attempt is made to conduct audits at all airports because of a lack of resources.

FAA officials advised even when the OIG believes improper diversions have occurred, FAA has not withheld AIP grants because the AAIA is too cumbersome to enforce. Under AAIA, the Secretary of Transportation may not withhold or terminate a grant for more than 180 days without reaching a formal determination that a violation has occurred, after providing the sponsor with notice and opportunity for a hearing. FAA officials advised it is difficult to reach such a determination within this limited timeframe. According to FAA officials, no AIP funds have ever been withheld because of revenue diversions.

Fifteen of the 22 OIG reports show, as a result of inadequate FAA monitoring, airports have lost approximately $76 million in revenue because sponsors and airports had not complied with AAIA. At the same time, the airports received $393 million in AIP grants, including $184 million in discretionary grants. FAA generally concurred with 18 OIG recommendations in 11 of the reports to require sponsors to refund $77.4 million to the airport revenue funds. As of November 1993, approximately $5 million had been refunded. However, FAA did not concur with recommendations to increase its oversight of sponsors and airports to ensure compliance with AAIA, due to the lack of resources.

FAA officials advised that the DOT OIG plans to issue a summary report in early 1994 on its audit of FAA monitoring of airport revenues. The officials believe the OIG will recommend that FAA (1) increase its monitoring to insure compliance with

AAIA, and (2) report the material internal control weaknesses disclosed in its reports to the Secretary of Transportation for inclusion in the Secretary's annual report to the President and the Congress as required by the Federal Managers' Financial Integrity Act of 1982.

E. Passenger Facility Charge

According to FAA, in the late 1980's, the Administration and Congress recognized the need for additional capital funding sources to expand the national airport system. The continued growth of air traffic was straining capacity of the existing aviation infrastructure. The traditional revenue sources for airport capital improvements, such as revenue bonds, leasing and concession income, Federal and state airport grant programs, and general tax revenue, began to appear inadequate to meet these demands.

Congress responded to these needs by enacting the Aviation Safety and Capacity Expansion Act of 1990, which allows public agencies controlling commercial service airports to charge each enplaning passenger a $1, $2, or $3 facility charge. Airports wishing to impose PFC's must apply to FAA for such authority and meet requirements defined in the legislation.

According to FAA data, as of September 30, 1993, 145 airports were granted approval to collect $8.2 billion in PFC's out of $17 billion requested. FAA's estimated net PFC collections for FY 1993 and FY 1994 at $420 million and $700 million, respectively (after airline collection charges). Moreover, FAA currently has an additional 33 applications pending approval to collect approximately $1 billion in PFC's.

Government officials and industry representatives advised that PFC and AIP funds are used essentially for duplicative purposes; that is, for airport development and improvement. In addition, the revenue basis for each is the flying public. However, while the PFC is levied in the form of a direct fee to the traveler and is retained at the airport, AIP funds are collected in the form of a Federal surcharge and are paid to the Government to be redistributed back to the airports.

Aviation officials advised PFC funds allow airports to pay for projects as they are being built and there appear to be less Federal controls on the use of PFC funds. One airport official viewed AIP grants as "Government handouts." According to a senior port authority official, airports should not receive AIP grants if they have the capital resources to pay for their own projects.

A prominent difference between the PFC and AIP is, to receive AIP funds, the sponsor must assure the Government that

airport revenues will be retained rather than diverted from the airport. While permission to impose a PFC does not require such assurances, FAA officials advised that such requirements could be incorporated into PFC-related legislation.

Airports must be in compliance with the Airport Noise and Capacity Act of 1990 to impose a PFC. The Act specifies that PFC revenues may be used: (1) only on approved projects, (2) to pay all or part of allowable costs, (3) as grantees' AIP matching funds, (4) to augment AIP funded projects, and (5) to pay the debt service and financing costs of bonds for eligible airport development. PFC revenues may be commingled with general airport revenue for bond debt service.

Eligible PFC funded projects must preserve or enhance safety, security, capacity, reduce noise impacts, or enhance competition among carriers. Such projects include: (1) any AIP-eligible development or planning project, (2) noise compatibility projects, (3) gates and related areas for movement of passengers and baggage, and (4) access projects on airport grounds. Projects may be for any other airport under control of the public agency, and may include eligible development in a capital improvement program or a new airport.

However, the Act provides for the reduction of AIP entitlement grants if the airport is collecting a PFC. According to FAA, PFC collection will reduce AIP entitlement grants by $57 million in 1993 and $105 million in 1994. The entitlement grants for large and medium airport hubs are reduced by an amount equal to 50 percent of PFC's collected in the fiscal year. These reduced grants are distributed to smaller airports.

According to some airline officials, the eligibility of some PFC funded projects is questionable. For example, in July 1992, FAA authorized the Port Authority of New York and New Jersey to impose a $3 PFC at John F. Kennedy (JFK), LaGuardia, and Newark International Airports for 34 months beginning October 1992. During this period, the port authority expects to receive $282 million from PFC collections.

According to senior Port Authority officials, the PFC funds are intended for building a rail system from New York City to the New York airports. FAA has approved $21 million in PFC funds for a feasibility study for the project. The rail system is estimated to cost $6 billion over a 35-year period and would be financed by a PFC. The officials stated FAA approved the use of PFC funds for the feasibility study since it meets AIP requirements. However, while the Port Authority has received approval to collect the $282 million, FAA has not approved projects for its expenditure.

According to an airline official, while the airlines agree the rail line is needed, they believe the city and/or the state of New York should pay for it. Airlines want PFC funds to be spent at the airport for their benefit. Airline officials object to the use of PFC funds for the rail system because it would use up all PFC funds for the port authority's three airports for 35 years. In addition, an airline official stated the rail system does not meet any of the eligibility requirements for PFC funding. The official advised that FAA may erroneously base the project's eligibility on the "on-airport ground" provision of the law on the theory the port authority will acquire the non-airport land by right of way on which the rail line is to be built. However, an ATA official noted that only a part of the anticipated costs will be expended on grounds owned by the airport.

III. DIVERSION OF AIRPORT REVENUES

According to information provided by Government officials and industry representatives associated with airport management, revenues are being diverted from airports under three sets of circumstances: (1) where the DOT OGC has determined the diversions are proper because the airport sponsor is excepted from provisions of Section 511(a)(12) of AAIA, (2) where sponsors claim they are excepted but the OGC has not made such a determination, and (3) where it appears the sponsor does not fall under the statutory exception.

A. Excepted Diversions

According to a DOT official, the DOT OGC determined four airport sponsors diverted revenues generated by their airports under circumstances considered excepted under AAIA. The OGC resolved the matter in favor of three of the airport sponsors after the OIG questioned the legality of the diversion. The OGC stated the remaining sponsor (a port authority) is excepted based on AAIA's legislative history. The excepted diversions totaled approximately $641.3 million over a 4-year period ending June 1993.

1. Congressional Intent

A DOT official advised the legislative history of Section 511(a)(12) of AAIA indicates the exception applies "exclusively or at least primarily" to airports that are part of a unified port authority such as the Port Authority of New York and New Jersey. However, nothing in the legislative history indicates the exception would apply to other than ports authority. For example, the U.S. Senate Conference Report describing the 1982 amendments to AIAA states:

> "* * * This provision is designed to ensure that airport systems which are receiving Federal assistance are utilizing all locally generated revenue for the systems which they operate, * * * Airports that are part of a unified ports authority [emphasis added] are exempt from this requirement if covenants or assurances in previously issued debt obligations or controlling statutes require that these funds are available for use at other port facilities."

The DOT official further explained, although the legislative history demonstrates Congress originally intended the exception to apply only to ports authority, the OGC believes such a restrictive interpretation of the law would be inequitable.

According to the official, OGC has, therefore, adopted a "plain meaning" interpretation of the law which does not restrict the exception to ports authority but rather applies the exception to all airport sponsors who have financing statutes or debt obligations in effect before September 3, 1982 and which require airport revenues be used to support other debt obligations or facilities of the sponsor.

2. Process of Determining Excepted Status

A DOT official advised there is no DOT/FAA policy directive establishing a uniform procedure to determine the excepted status of an airport sponsor. He stated a review of excepted status is conducted by the OGC but can be initiated by several DOT authorities under varying circumstances. The authorities include the OIG, OGC, FAA Administrator, and the nine FAA regional offices.

The OGC has determined the following four airport sponsors are excepted from the revenue retention requirement of AIAA: Hawaii; Massachusetts Port Authority; Port Authority of New York and New Jersey; and Saint Louis, Missouri. Moreover, OGC is currently considering revenue retention issues pertaining to the city and county of San Francisco, California and the Maryland Department of Transportation.

a. Hawaii

The State of Hawaii owns, operates, and sponsors Honolulu International Airport. During FY 1989 through FY 1993, the airport received AIP discretionary grants totaling $700,742 and entitlement grants totaling $37.4 million. From July 1, 1989 to June 30, 1993, Hawaii diverted $304.7 million of airport revenue to other state activities. These diversions occurred as a result of (1) state statute, and (2) a one-time Congressional exception to AAIA requirements. In addition, according to airport officials, the airport has provided rent-free space and other benefits to a non-profit organization although Federal legislation prohibits such activity.

In March 1992, the DOT OIG determined an Hawaiian statute requiring a 5 percent surcharge on airport revenue (less debt service), payable to the state's general fund was significantly in excess of services provided by the state. Further, the OGC concluded the state statute did not meet the literal terms of the exception to the AAIA's revenue retention requirement. Consequently, the OIG recommended future grant payments be withheld until Hawaii complied with grant assurances and that repayment from the state be required.

According to a DOT official, the OGC reconsidered its decision and issued a second opinion after meeting with one

of Hawaii's U.S. Senators, a counsel for the Hawaii Department of Transportation (HDOT), and a representative from the Governor's office. This opinion states that counsel for Hawaii noted that, although the airport revenues are directed to the general fund, they are used in part to support the state's facilities and to meet the state's debt obligations. Because the Hawaiian statute which integrated a portion of airport revenues into the overall financial structure of the state was in effect before September 1982, the OGC reversed its decision.

Moreover, counsel for Hawaii noted the exception does not require facilities funded with airport revenue be transportation related, but merely that they be other facilities of the airport owner or operator (i.e., the state). The DOT official agreed this interpretation opened the "flood gates" for diversion in that it holds an excepted sponsor may divert airport revenues to any facility which it owns and that facility need not be transportation related. The pertinent legislative history does not contradict this conclusion. He added, if Congress is dissatisfied with this decision, legislation could be enacted to restrict the application of airport generated revenue solely to airport facilities.

According to airport officials, from July 1, 1989 through June 30, 1993, a total of $63.2 million was paid the state from the 5 percent charge. However, only $8.5 million of the diversion was supportable according to HDOT's cost allocation plan. Therefore, the officials advised the remaining $54.7 million constituted diversion of airport generated revenue but it was permissible because of the exception.

The second major diversion involves the transfer of airport revenues for other state transportation needs. In 1987, Hawaii accepted a concessionaire's bid to run its duty-free shops for a minimum guaranteed payment of $1.1 billion over a 5-year period. According to the state, these funds would be substantially in excess of any airport system requirements. Therefore, the state sought to transfer some of these revenues to its Highways Division which was in critical need of funds. DOT advised the state such transfers would violate Federal law. However, in 1990, Congress amended AAIA to allow a one-time exception for Hawaii to use revenues generated on the sale of duty-free merchandise at off-airport locations for eligible transportation projects. The duty-free shops sell goods to tourists, but the goods are not delivered until the tourist is ready to leave the country. Therefore, these shops are dependent on the airport and airlines, thus the airport-generated nature of their revenues.

An eligible project is defined in the statute as a transportation project such as highway construction or reconstruction which will facilitate access to an airport and located

within 10 miles by road of such airport. The amendment states use of revenues from duty-free sales is subject to the following restrictions: (1) revenues must be generated after May 4, 1990 and before December 31, 1994, (2) aggregate use of any such revenue cannot exceed $250 million, (3) bondholders are protected, (4) the state is not eligible for DOT discretionary funding in any fiscal year in which it uses these revenues, and (5) airlines are protected against increases in landing and rental fees in excess of Consumer Price Index changes.

Airport officials stated, as of June 30, 1991, the $250 million had been transferred (diverted) to the Highways Division but, as of October 1993, only $36.3 million had been spent. According to Federal and state officials, there appears to be no review or monitoring of the Highways Division by the Airports Division or FAA of the transportation projects' compliance with the Federal legislative restrictions. Moreover, a state official identified three AIP grant applications for $7.1 million of DOT's discretionary funds to repair airport damage caused by hurricane Inika in 1992. According to an FAA official, Honolulu airport was awarded a discretionary grant of $607,500 in FY 1992 to repair hurricane damage which appears to be in contravention of the fourth restriction noted above.

In addition to the diversions already discussed, the Honolulu International Airport permits the Pacific Aerospace Museum, a private non-profit organization, to occupy approximately 6,200 square feet of space under a free 30-year lease in the airport's Overseas Terminal Building. Improvement costs of $1.3 million and a loan of $1.5 million for exhibits were provided by the airport in 1992. According to an airport official, museum revenues are not incorporated into airport revenues and no systematic accounting of income and expenses is provided to airport officials. The official advised, from January 1993 through September 1993, the museum had revenues of $129,000 and expenses of $124,000. There is no formal repayment schedule for the loan and, to date, no portion has been repaid. Airline officials advised the rent-free space, expenditures for improvements, and lack of loan repayments constitute a diversion of revenue.

b. Massachusetts Port Authority

The Massachusetts Port Authority (Massport) was created in June 1956. It owns, operates, and sponsors Boston-Logan International Airport and Laurence G. Hanscom Field, along with other facilities. Massport is self-supporting and its bond covenants require revenues to be consolidated so revenues of one facility may be used to support development and operations of another. Massport's income, including airport income, is used to offset losses sustained by the sponsor's other facilities.

From FY 1989 through FY 1992, Logan Airport received AIP discretionary grants which totaled $3.8 million and entitlement grants of $33.1 million. From July 1989 through June 1992, Massport diverted $69.5 million from the airports' aviation operations to Massport's consolidated accounts. In addition, during this period the airports paid approximately $15 million in lieu of taxes to Chelsea, Boston, and Winthrop, Massachusetts for a total diversion of $84.5 million. FAA approved a $3 PFC in August 1993 to collect $598.8 million by October 2011. A DOT official stated OGC determined in 1992 that Massport is excepted from AAIA revenue retention requirements.

In 1992, the DOT OIG reported that no services were received for the payments made to Boston, Chelsea, and Winthrop. At the OIG's request, the OGC reviewed the matter and determined that, due to provisions in Massport's enabling legislation, which was enacted before 1982, it was in compliance with the AAIA.

c. Port Authority of New York and New Jersey

The Port Authority of New York and New Jersey is a self-supporting governmental agency created by the states of New York and New Jersey in 1921. The port authority owns, operates, and sponsors JFK, LaGuardia, and Newark International Airports. From FY 1991 through FY 1993, the airports received AIP discretionary grants totaling $50.2 million and entitlement grants totaling $81.7 million. From January 1991 to December 1992, the port authority diverted $240.7 million from aviation operations at the three international airports. In July 1992, FAA approved a $3 PFC for each of the three airports to collect $282 million by August 1995 for approved projects.

The port authority's revenue bond covenants require its operations be consolidated so revenues from any port authority entity can be used to support development and operations of another. Port authority financial statements show aviation funds offset losses incurred by other port authority entities.

A DOT official advised, although a formal determination of the AAIA excepted status of the port authority has not been made, the legislative history specifically exempts unified ports authority from the revenue retention requirements of Section 511(a)(12). Therefore, in OGC's view, there is a legal presumption the port authority is excepted.

d. Saint Louis, Missouri

The city of Saint Louis owns, operates, and sponsors Lambert-St. Louis International Airport. From FY 1989 through FY 1992, the airport received AIP discretionary grants of $40.5 million and entitlement grants of $33.5 million. According

to DOT officials and airport records, from July 1989 to June 1992, the city diverted $11.4 million of airport generated revenue. In September 1992, FAA approved a $3 PFC to collect $84.6 million by March 1996.

The airport is required to pay the city's general fund 5 percent of airport operating revenues annually. From FY 1990 through FY 1992, these payments amounted to a diversion of $8.9 million. According to a DOT official, the city is excepted on the basis of a 1954 city ordinance requiring the payments. Therefore, payments by the airport of a percentage of operating revenues to the city are permissible even though no services are received.

Also, the airport has a lease with a major telephone company for public telephone services. In 1989, the city superseded the airport's lease, and required the telephone company to send airport telephone commission payments to the general fund. This resulted in a diversion of $2.1 million in commissions plus $300,000 in interest during the period July 1989 through June 1992. The city later refunded $2.4 million to the airport.

Further, an airport official stated, during 1992, the city included salaries of non-airport personnel in the airport's cost allocation plan. The city's former mayor was placed on the city's payroll as chief-of-staff along with a secretary and 80 percent of their salaries of $140,000 a year were charged to the airport. This practice was recently discontinued and the diversion of $112,000 was subsequently repaid.

B. Diversions by Sponsors Claiming Excepted Status

According to a DOT official, the OGC has been asked for a legal opinion as to whether San Francisco and Maryland are excepted from the provisions of Section 511(a)(12). Both divert airport revenue but claim they are excepted. For many of the same reasons, airport officials at Buffalo, New York and San Diego, California also believed they are excepted. Diversions generated by these four airports totaled approximately $140.8 million over a 12-year period ending June 1993.

1. City and County of San Francisco, California

The city and county of San Francisco owns, operates, and sponsors San Francisco International Airport. From FY 1982 through FY 1993, the airport received AIP discretionary grants totaling $42.7 million and entitlement grants totaling $53.8 million. The airport has not requested authority to impose a PFC.

In July 1981, the airport entered into a 30-year lease agreement with major airline carriers which required the airport

to pay the city annually for indirect services and management of the airport. This was the result of litigation between the city and the airlines over recurring indirect service payments. The agreement established an annual payment of 15 percent of non-airline concession revenue. According to airport records, from July 1981 to June 1993, $119.4 million of airport revenue was diverted to the city. No invoice or bill is presented to the airport to support the payments.

The payments are used to subsidize a public transportation system owned and operated by the city. An airport official commented the 15 percent payment is probably more than the city's indirect costs; however, when the agreement was reached with the airlines, historical indirect costs were not considered.

2. Maryland

The State of Maryland owns, operates, and sponsors Baltimore/Washington International (BWI) Airport. According to airport officials and their records, while the state has occasionally diverted revenue from airport operations, it has also been a source of funds for BWI. For example, airport records show that from July 1984 through June 1986 and from July 1991 through June 1992, the state diverted approximately $12.7 million of airport net income to the state's general fund. However, since July 1972, the state also used $168 million from the transportation trust fund to subsidize the airport's operations. From FY 1984 through FY 1986 and from FY 1991 through FY 1992, the airport received AIP discretionary grants totaling $18.8 million and entitlement grants totaling $14 million. FAA approved a $3 PFC in July 1992 to collect $141.9 million by September 2002 for approved projects.

All state-owned transportation facilities and programs, including those of the airport, are operated and financed through a consolidated, self-sustaining transportation trust fund established in 1970. All transportation revenues, including those of the airport, are commingled in the trust fund. These revenues are used to pay airport and all other transportation expenses. State officials advised that, although some funds were diverted, the state's trust fund operation makes diversions permissible under Federal law. The DOT OIG has questioned the legality of the diversions and awaits an OGC ruling.

3. Niagara Frontier Transportation Authority, New York

The State of New York's Niagara Frontier Transportation Authority (NFTA) was created in 1967 to promote development of transportation and related services. NFTA owns, operates, and sponsors Greater Buffalo International Airport (GBIA) and the Niagara Falls International Airport. From March 1992 through February 1993, GBIA had a net income of approximately

$6.8 million which NFTA diverted to subsidize non-aviation activities including the Metro bus and rail system which had an operating loss of $36 million for this period. For FY 1992 and FY 1993, the airport received AIP discretionary grants totaling $8.1 million and entitlement grants of $869,048. FAA approved a $3 PFC in May 1992 to collect $189.9 million by March 2026.

Since 1974, when the Metro bus rail system was created, NFTA has used the airport's net income to subsidize this transportation activity. Airport officials claim the airport is excepted and its revenues legitimately can be used for NFTA transportation purposes because it is a public benefit corporation whose purpose is to develop a unified mass transport system for the Niagara district.

From 1985 through 1990, the airlines withheld $8.2 million in rent payments because airport revenues were being diverted to subsidize other NFTA operations. The authority filed a complaint in U.S. District Court against the airlines for their failure to pay rents and for breach of their lease agreements. In 1990, the airlines entered into an out-of-court settlement with NFTA and paid the rents.

4. Port of San Diego, California

The San Diego Unified Port District was established in 1962 and owns, operates, and sponsors Lindbergh Field/San Diego International Airport. During FY 1991 and FY 1992, the airport received AIP discretionary grants totaling $7.2 million and entitlement grants of $178,596. Airport records show from July 1991 through June 1992, the port district diverted $1.9 million of airport revenue into its single fund and used it for non-airport activities. According to port officials, the San Diego International Airport, as part of a port authority, operates as if they are excepted under the provisions of the AAIA.

C. Other Revenue Diversions and Potential Diversions

Eleven sponsors visited either diverted or planned to divert airport revenues for non-aviation purposes. The diversions are the result of charges for indirect services, charitable contributions, commingling of airport revenue with other city funds, and airport payments in lieu of taxes. Diversions generated by these airports total approximately $111.7 million from July 1982 to December 1993.

1. Los Angeles, California

The city of Los Angeles' Department of Airports owns, operates, and sponsors Los Angeles International Airport. From FY 1982 through FY 1992, the airport received AIP discretionary grants totaling $34.7 million and entitlement grants totaling

$146.4 million. In December 1992, the Department of Airports paid $8.7 million to the city's general fund for indirect city services to the airport from July 1982 through June 1992. A senior city official stated the airlines are in litigation with the city over the payment which they consider an improper diversion. The airlines are requesting the $8.7 million be reimbursed because retroactive billing of indirect costs was improper and invalid.

a. Potential Diversion of Airport Revenue

According to an airport official, city budget deficits resulted in the mayor's plan to use airport generated revenue to pay for 3,000 additional police officers. The deficit also prompted the city to explore new sources of revenue for its general fund, such as the airport's aviation fund. However, legal constraints and airline contractual agreements prevented the city from doing so. The airport official stated city leaders are considering the transfer (diversion) of $30 million from the airport's capital account to the city's general fund. At the same time, FAA approved a $3 PFC in March 1993 to collect $360 million by July 1998 for approved projects.

b. Airlines/Airport Dispute

According to an airline official, a major disagreement between the airlines and the airport exists over increased airline costs due to proposed changes in the method used to determine landing fees and terminal rents. Until July 1993, the residual cost method was used to determine landing fees. Under this method, airlines accepted the financial risk of operating the airport because the landing fees were determined after deducting non-airline revenue. This resulted in lower residual costs for the airlines and a lower landing fee. Also, the airlines could question how the airport's non-airline revenue was spent.

According to the official, the compensatory method began July 1, 1993. Under this method the airport bears the financial risk of its operations and allocates costs to the airlines and other airport users for services provided. The airport unilaterally determines costs and the allocation formula.

According to an airport official, under the residual method the airport and the airlines had a 40-year contract which included a landing fee of $0.51 per thousand pounds of aircraft landing weight. When the contract expired in December 1992, the airport increased the landing fee to $1.56 which is still lower than some other major airports. The official further stated the compensatory method will create a tenant-landlord relationship and control of the airport will transfer from the airlines to the city. According to ATA officials, the airlines believe the city's increased landing fee is excessive

when compared to the airport's costs and will result in additional revenue that could be diverted to the general fund.

An airport official stated the airport attempted to negotiate an agreement with the airlines similar to the one allowing the transfer of 15 percent of the San Francisco International Airport's concession revenue to the city. The airlines refused because they want the revenue to remain at the airport and were concerned about the precedent it would establish. The carriers refused to pay the higher rate and sought an injunction from the U.S. District Court to prohibit the Department of Airports from interfering with their operations. A Federal judge denied the carriers a temporary injunction stating, if the airlines thought the rates were too high, they could sue for refunds and seek administrative relief before DOT.

2. Chicago, Illinois

The city of Chicago owns, operates, and sponsors O'Hare and Midway airports and Meigs Field. According to FAA records, during FY 1990 through FY 1993, O'Hare airport received AIP discretionary grants totaling $39.8 million and entitlement grants totaling $83.5 million. Since July 1990, approximately $2.9 million of O'Hare's revenue has been diverted for a city program to aid homeless individuals and $900,000 is budgeted for FY 1994. FAA approved a $3 PFC in June 1993 to collect $500.4 million by October 1999 for approved projects.

During the 1980's, the extension of the Chicago Transit Authority's metro rail to O'Hare airport resulted in an influx of the homeless there. According to city officials, the airport was an "authorized warming station" for the homeless in the Chicago metropolitan area. Airport officials stated, by 1989, the problem had reached crisis proportions; homeless individuals were bothering airline employees and passengers and creating health and safety concerns. Officials from several airlines asked city officials for assistance in getting the homeless out of the airport.

In 1990, the city established the O'Hare Outreach Program of Haymarket House to assist homeless individuals who frequent the airport. The city uses airport revenues to fund 80 beds at two shelters in the city and a staff of social workers at the airport, who provide assistance to the homeless and arrange their transportation to the shelters or other locations. According to airport officials, the program is a "legitimate airport operation and maintenance expense" which is shown in the Department of Aviation's budget. However, airline officials believe these costs have grown too high even though they originally agreed to assist the city.

3. Philadelphia, Pennsylvania

The city of Philadelphia's Division of Aviation owns, operates, and sponsors the Philadelphia International Airport. During FY 1991, the airport received AIP discretionary grants of $13.1 million and entitlement grants of $6.7 million. A city official stated, during the city's financial crisis at the end of 1990, the city diverted approximately $98 million from the aviation capital fund to the city's general fund for non-aviation purposes. FAA approved a $3 PFC in June 1992 to collect $76.2 million by July 1995 for approved projects.

In July 1991, the city discontinued the practice of commingling its funds after airlines protested the practice and threatened legal action. The city repaid $113 million for the diversion to include interest to the aviation capital fund and agreed to: (1) separate aviation funds from the consolidated cash account, (2) use aviation funds only for aviation purposes, and (3) prohibit temporary advances of aviation funds to other city funds.

In addition to the above diversion of airport revenues facilitated by the commingling of funds, another diversion continues related to parking operations. According to an independent review conducted in 1989 by the city controller, the revenue based allocation method used by the city's parking authority unfairly transfers indirect costs from city parking operations to the airport lots, resulting in significant additional charges and loss of income to the airport. The Philadelphia Parking Authority is responsible for airport parking operations as well as on- and off-street parking facilities in Philadelphia. Net income generated by the airport garages and lots is transferred to the aviation fund as non-operating revenue while other parking revenue is transmitted to the city's general fund. Parking authority records show the current procedure used to allocate parking administration expenses to the airport results in a diversion of approximately $1 million annually. In effect, the inequitable allocation method benefits the city's general fund at the expense of the aviation fund.

4. Rhode Island

The Rhode Island Airport Corporation is the sponsor for T.F. Green Airport which is owned by the State of Rhode Island. From FY 1990 through FY 1993, Rhode Island received AIP discretionary grants totaling $24.2 million and entitlement grants totaling $9.5 million for improvements to the T.F. Green State Airport. According to airport records, during the period July 1990 through June 1993, the state diverted $675,000 from aviation operations to the city of Warwick for unspecified municipal services provided to the airport. The amount diverted was the result of a $0.50 daily surcharge placed only on vehicles parked at the airport's garage or lots.

5. Austin, Texas

The city of Austin owns, operates, and sponsors Robert Mueller Municipal Airport through the Department of Aviation. According to FAA, during FY 1992 the airport received $4.2 million in entitlement grants. FAA approved a $2 PFC in June 1993 to collect $6.2 million by June 1995.

According to airport officials, the airport owns an 18-hole golf course located on airport property but which is operated as a municipal golf course by the city. The revenue from the golf course is diverted from the airport into a golf fund. The profit from all city golf courses was approximately $84,000 in 1993.

Another airport is scheduled to open in 1998 at the Bergstrom Air Force Base which is scheduled to close. The new airport property will revert to Austin. According to an airport official, the city is considering three options before transferring the Bergstrom airport to the aviation department: (1) transfer it at no cost to the airport, (2) enter into a long-term lease for a yet undetermined rent payable from the airport fund, (3) sell the property to the airport and obtain the money up front for the city. The city real estate division estimated the value of the new airport property at $9.7 million. Estimates of annual lease payments range from $600,000 to $970,000 a year.

According to an airline official, the city's plan to obtain lease payments when the property is transferred is a diversion of airport generated revenue. An airport official stated, although, the city does not charge rent to other entities within the city government, the city believes it has a right to obtain a return on its historical investment in Bergstrom since it was the owner before the Air Force operated it.

6. Indianapolis Airport Authority

The Indianapolis Airport Authority, a municipal corporation, owns, operates, and sponsors the Indianapolis International Airport and others. During FY 1991 through FY 1993, the airport received AIP discretionary grants totaling $28.9 million and entitlement grants of $13.3 million. FAA approved a $3 PFC in June 1993 to collect $117.3 million by July 2005.

State legislation passed in 1992 allows the city to impose payments in lieu of taxes on municipal corporations such as the airport authority which are otherwise exempt from property taxes. The legislation states the payments shall be imposed in the same manner as property taxes and based on the assessed value of tangible property. The payments, which are estimated by airport officials at $6 million annually (the city says it will settle for $2.5 million annually), have not been imposed on the airport because the airlines have threatened lawsuits if the

assessments are levied. According to airline and FAA officials, if such a fee is imposed and the city does not provide supportable and documented services for the fee, a diversion would result.

7. Milwaukee, Wisconsin

The county of Milwaukee, through the Department of Public Works owns, operates, and sponsors General Mitchell International Airport. During FY 1991 through FY 1993, the airport received AIP discretionary grants totaling $5.7 million and entitlement grants totaling $9.1 million. Airport records show from January 1991 to December 1993, the county diverted an estimated $185,000 of interest. According to airport officials, the diversion occurred as a result of the county's practice of collecting the airport's entire revenue for services and then returning any overages. While the county returned excess payments made by the airport at the end of the year via credits, it did not return interest earned by the airport for overage payments.

According to county and airport officials, to facilitate its cash management, the county commingles all its cash revenues and investments including the airport's which also allows for borrowing among member funds. For example, a fund with a negative balance can borrow from another member's funds including the airport fund. Hence, the airport's income is used to offset losses sustained by the sponsor's other facilities.

8. New Orleans, Louisiana

The city of New Orleans owns, operates, and sponsors the New Orleans International Airport. From FY 1991 through FY 1993, the airport received AIP discretionary grants totaling $43.7 million and entitlement grants of $10.4 million. FAA approved a $3 PFC in March 1993 to collect $77.8 million by April 2000.

Airport records show, from January 1991 through December 1993, the airport diverted $238,000 for charitable contributions to non-airport related organizations such as Christmas in New Orleans and New Orleans Hispanic Heritage. An airport official characterized such contributions as marketing efforts to attract airport patronage. In similar situations, the DOT OIG concluded the contribution of airport-generated funds for non-airport related purposes violates AAIA Section 511(a)(12).

9. Wayne County, Michigan

Wayne County Michigan owns, operates, and sponsors Detroit Metropolitan Airport through its Division of Airports, Department of Public Services (DPS). During FY 1991 and FY 1992, the airport received AIP discretionary grants totaling

$18 million and entitlement grants of $16.7 million. FAA approved a $3 PFC in September 1992 to collect $640.7 million by June 2009. Airport records show, from December 1990 through November 1991, the county diverted $276,000 from the airport by charging excess and undocumented indirect costs.

According to an airline official, the airport is charging excessive and undocumented indirect costs. Airport and county records show the DPS followed a cost allocation plan different from the approved county plan resulting in an overcharge to the airport for indirect costs. County and airport officials acknowledge that deviations from the county cost allocation plan do occur and agree with the need for a more detailed DPS allocation consistent with the county plan. They do, however, maintain that indirect costs charged to the airport are fair and reasonable under the formula applied.

10. Palm Springs, California

The city of Palm Springs owns, operates, and sponsors Palm Springs Regional Airport. During FY 1989 through FY 1991, the airport received AIP discretionary grants totaling $5.0 million and entitlement grants totaling $5.7 million. From July 1989 through June 1991, according to OIG officials, the city diverted $183,000 of airport revenue to the general fund for payments in lieu of property fees. FAA approved a $3 PFC in June 1992 to collect $81.9 million by November 2032.

The City Council of Palm Springs had passed a resolution requiring the airport to make payments in lieu of property fees to the general fund even though the city provided no services. City officials stated this practice has since been discontinued. Whether the $183,000 will be refunded to the airport by the city is still unresolved.

11. The Port of Oakland

The Port of Oakland owns, operates, and sponsors the Metropolitan Oakland International Airport. For FY 1989 and FY 1990, the airport received AIP discretionary grants totaling $6.3 million and an entitlement grant totaling $3.5 million. From FY 1989 to June 1990, the airport diverted $486,000 to the city of Oakland. In June 1992, a $3 PFC was approved to May 1994 which is expected to generate $12.3 million.

According to port authority and OIG officials, beginning in FY 1983, the Port of Oakland made payments to the city of Oakland in lieu of property taxes. From July 1989 to June 1990, the airport's share of the payments was $486,000. According to an OIG report, such payments violate AAIA because no documented proof of services was provided to the airport. These payments have not been made since then, and an agreement was reached that, beginning in July 1990, any payments would be based on the

documented cost of services actually received from the city. According to port authority officials, the city of Oakland and the port authority are attempting to resolve the amount to be refunded.

D. Diversion Through Imposition of Taxes on Airport Activities

According to airport officials, state and local authorities are imposing various taxes on airport related activities. They include taxes on fuel, retail sales, food and beverages, and parking taxes. Some taxes are levied exclusively on airport activities while others are imposed on a class of taxpayer which includes airport facilities and services.

A DOT official advised that, to date, OGC only considers one form of taxation, the aviation fuel tax, to be an improper diversion of airport revenues in contravention of AAIA sponsor assurances. The official explained that, in 1987, Congress amended the AAIA to ensure revenues from local aviation fuel taxes be kept on the airports. It is OGC's opinion, consistent with the legislative history of that amendment, that Congress intended the 1987 legislation to apply only to local fuel taxes, other than those in effect prior to 1987, and not to other taxes imposed by local governments. The official advised the diversion of revenue by discriminatory state taxation of airport facilities and services is permissible until such time as Congress prohibits such diversion by law. The official noted that Congress may at some point decide to further amend the AAIA to address the problem which occurs from state and local taxation of the above activities, facilities, and services.

Jurisdictions where airport facilities and activities are taxed include:

-- The Chicago, Illinois Metropolitan Pier and Exposition Authority levies an airport tax on all persons engaged in providing ground transportation for hire to passengers from O'Hare and Midway airports. The tax results in assessments of approximately $5.2 million per year.

-- The city of Kenner, Louisiana levies a retail sales and consumption tax exclusively on retail sales, leases, and rentals at the airport. The tax results in annual assessments of approximately $673,000. Kenner also imposes an automobile parking and storage tax on vehicles at both airport and non-airport facilities. The tax on vehicles at airport facilities results in collections of approximately $600,000 annually. According to a city official, since April 1987, the city has collected $3.8 million and only $94,308 is attributable to non-airport parking.

-- Since April 1988, the New Orleans, Louisiana Exhibition Hall Authority, a state authority, has levied a special 0.5 percent food and beverage tax. This tax applies only to Orleans Parish and the airport which is located in a neighboring parish. The tax results in annual assessments of approximately $50,000.

-- Since January 1988, the State of Michigan has imposed an airport parking facility excise tax on airport parking operators. The tax results in annual assessments of approximately $7 million, or approximately $43 million since inception. The majority of the tax revenue is subsequently transferred by the state to the county which acts as the airport's sponsor.

-- The city of SeaTac, Washington imposed a $0.50 parking tax in July 1993 to raise revenue to fund capital projects in the city's regional transportation plan. The city finance director anticipates the tax will raise approximately $1.6 million annually, the majority derived from the parking at Seattle-Tacoma International Airport or airport related parking.

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THE
NATIONAL
INDUSTRIAL
TRANSPORTATION
LEAGUE

April 4, 1994

The Honorable Ernest F. Hollings, Chairman
Commerce, Science and Transportation Committee
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

After the Easter recess, the U.S. Senate is expected to consider an attempt by Federal Express and UPS to include language in an airport development bill (S. 1491) which would deregulate the intrastate activities of all "intermodal all–cargo air carriers." The National Industrial Transportation League, the nation's oldest and largest shippers' association representing businesses of all sizes using all modes of transportation asks your support of S. 1491 as reported out of committee without further amendments..

As proposed, this amendment would amend the *Federal Aviation Act* and would deregulate related intrastate motor carrier operations. It covers rates, routes, and services of intermodal carriers transporting "property, pieces, parcels, or packages." Most importantly, it defines an intermodal all–cargo air carrier as "an air carrier (including an indirect all cargo air carrier) that undertakes to provide the transportation described in section 105(a)(4) or any other carrier having authority to provide transportation which is affiliated with an air carrier through common ownership."

The amendment tracks the decision of the 9th Circuit Court of Appeals in a decision issued last year finding that integrated air package express companies are exempt from state regulation. The state of Texas has adopted the 9th Circuit ruling. If enacted, this amendment would broaden these rulings to encompass the entire country and expand it by including all direct and indirect intermodal all–cargo air carriers.

The National Industrial Transportation League applauds the effort. The recent rulings by the Federal Courts and state action by California and Texas reflect the reality of today's commerce. The action being proposed in Congress would bring about these same reforms for both shippers and carriers across the country. By expanding the definition to include all direct and indirect cargo air–carriers, the playing field will be open to all carriers. The result of these reforms, if enacted, will be increased options for shippers and, if what has happened in California and Texas is an example, will lead to further deregulation efforts.

The National Industrial Transportation League will continue to support efforts that would lead to total deregulation. However, we believe strongly that this is a good first step. We are concerned that any attempt to broaden the proposed language to include additional deregulation could ultimately hurt the possibility for final passage.

Sincerely,

Kathy Luhn
Director of Government Affairs
cc: Members, Commerce, Science and Transportation Committee

1700 North Moore Street, Suite 1900 • Arlington, Virginia 22209-1904 • (703) 524-5011 • (703) 524-5017 (fax)

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Statement of Edward A. Merlis
Senior Vice President - External Affairs
Air Transport Association of America
on Aviation Infrastructure Needs
House Committee on Public Works
and Transportation
Subcommittee on Investigations and Oversight
April 28, 1994

> "All over the world, governments and local airport authorities are building gold-plated airports with high-tech baggage handling systems, state-of-the-art terminal and fueling facilities, and extravagant price tags to match. However, if Munich and Denver are to serve as examples, many of these airports may end up struggling to handle their growing debt instead of basking in healthy passenger traffic" - The Armbrust World Jet Fuel Report, April 15, 1994.

Mr. Chairman and members of the subcommittee, I am Edward A. Merlis, Senior Vice President of the Air Transport Association of America (ATA). ATA is the airline industry trade and service organization representing major U.S. airlines providing scheduled passenger and cargo services.[1] Our members transport more than 95% of the passengers and cargo shipped in the United States.

We appreciate the opportunity to appear today to address the important topic of aviation infrastructure needs. The nation's air carriers truly believe that proper investment of funds into necessary capital improvements is essential to their ability to provide safe, efficient and reliable service. At the same time, however, we are alarmed at the non-stop building that is occurring even as airlines are struggling both to stay afloat financially and to re-think some of the fundamental ways in which they do business. We are also concerned that the goals of Federal aviation financing programs are subject to being thwarted by the unceasing attempts of local government to raid the self-sustaining national aviation system to fund non-aviation budgetary shortfalls.

Today, the aviation system finds itself in the strange situation of being asked to pay a

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[1] ATA Member Airlines - Alaska Airlines, Aloha Airlines, american Airlines, American Trans Air, Continental Airlines, Delta Air Lines, DHL Airways, Evergreen International Airlines, Federal Express, Hawaiian Airlines, Northwest Airlines, Reeve Aleutian Airways, Southwest Airlines, Trans World Airlines, United Airlines, United Parcel Service, USAir. Associate Members - Air Canada, Canadian Airlines International, KLM Royal Dutch Airlines.

steep price for success -- a success for the passenger and shipper which has unfortunately not inured to the benefit of either the employees or stockholders of airlines, an increasing number of whom are one and the same. And frankly, without restoration of financial health, the substantial benefits which the public has derived from this system may be illusory in the future.

As you know, the aviation system is pretty much self-sustaining, funded through a combination of federal funds, paid into a Trust Fund by passengers, shippers, and other aviation users, locally assessed taxes in the form of Passenger Facility Charges, and airport user fees in the form of landing fees and rental charges. Passengers and their well-wishers, or meeters and greeters, also pay in the form of parking, concessions and other discretionary expenditures at airports, all of which is, under Federal law, supposed to be reinvested in the local airport or airport system.

The result is a national aviation system which is the envy of the world. Approximately forty percent of all worldwide airline travel occurs in the United States. And while the highly-competitive airline industry has been bludgeoned into massive losses of over $11.5 billion since 1990, airports continue their success as local economic engines, generating revenues which are becoming the target of envious local governments. I would like to identify three prime examples of the price the aviation system is being asked to pay for providing such extensive benefits to the U.S. economy.

First, there is a belief that airline service will be provided, regardless of the realities of local economies. Hence airport construction is perceived as good business -- and it also creates jobs (however temporary). The new Denver Airport, which is now supposed to open on May 15, is an excellent example of that phenomenon. Denver International Airport will be the second largest airport in Denver when it opens -- it will have fewer gates (many of which will not be in use), and the same number of runways as Stapleton, although more concurrent landings will be possible. For this, the travelling public will be asked to pay over $3.5 billion. This is a high price to pay when less costly alternatives were available.

Second, and related to airport infrastructure for the national aviation system is the matter of local transportation infrastructure. If airports serve as the engine of commerce for local communities, creating job opportunities and generating economic growth in those communities and thus bettering local living standards, it should not be the responsibility of the traveler or shipper to pay for local transportation infrastructure, particularly after the traveler has virtually paid in full for the airport. Communities are seeking to place a disproportionate burden on airport users for their local transportation needs.

Look at New York City. There is a very significant road congestion problem in New York City -- severe, sometimes paralyzing gridlock. Some of that traffic is attributable to traffic headed to or from the airports. But rather than come up with a region-wide, sensible

solution to solve the larger problem, the Port Authority is planning a dedicated, 25 mile long light rail system from Manhattan to Kennedy airport, via La Guardia. This train, or different iterations of the same theme, has been proposed and dismissed numerous times in the past. But, with the creation of PFCs, the Port Authority apparently figures that it can simply impose a 35-year, $6-billion tax on airport users, and build this train, saddle our passengers with the total bill for a transportation project which many contend is not the proper solution to road congestion related to the airports. In the process PFC funding for over $2 billion in on-airport safety, capacity, security, and noise-related improvements for two of the most congested, noise-impacted airports in the country will be ignored.

Finally, both airports and airlines are faced with the ultimate challenge to their long-term financial viability -- the politicizing of airport management in order to take money off of airports for non-aviation purposes. The spine chilling situation in Los Angeles, if carried out elsewhere, has the potential of taking the premium air transportation system in the world, and turning it into a shabby, second rate, high priced system, affordable to a select few. Local officials in Los Angeles want the airport to pay general expenses of the city, rather than facing the reality that local taxes on the citizenry must be raised or the costs of government reduced. Increasing the cost of doing business in Los Angeles for the airlines, by siphoning money off the airport, constitutes a blatant disregard for the national aviation and airport system which Congress has so carefully crafted. And the consequences of this effort are national in scope.

There are a host of ways in which a local government and airport can conspire to divert revenue. Overcharging for city-provided services, accounting gimmicks and land sales are but a few. This last trick is particularly pernicious. In this scenario, the local community, which contributed land for the establishment of an airport in order for the community to derive the economic benefits of aviation for the community, now seeks to be paid from the airport's funds for the "debt" attributable to the donated land. The danger of this scheme must not go unchallenged by the Congress.

The Aviation Trust Fund and the aviation programs which this Committee oversees finance development which has fostered the economic development and health of many local communities. The intent of the Airport and Airway Trust Fund was to place the primary burden of airport and airway development on the direct users of the system. If allowed to go unchecked, communities could reap the benefits of an aviation system financed by aviation users, double dip by diverting revenues generated by that airport into the community a second time, and ultimately turn our national aviation system into an inefficient, financially weakened, excessively costly, and balkanized array of airports.

We think that the solution to these multiple problems is to address them head on. Aviation law already embodies the concept of reasonable airport rates and charges. In light of both the monopoly position occupied by most airports in this country and the critical contribution each airport makes to the national aviation system, Congress recognized the importance of controlling airport rates and charges. But existing law does not spell out nor

does it clearly specify the extent to which airports can build up surpluses or define the concept with of reasonableness with any degree of specificity. By limiting the extent to which airports can build up surpluses, imposing sanctions on the diversion of revenues out of the aviation system, and providing for expeditious, efficient, and low cost relief when violations occur, the Congress can remedy this deficiency in Federal law, particularly at a time when practices going on today threaten the very system whose health this subcommittee is investigating. (Exhibit I).

Determining Infrastructure Needs

Mr. Chairman, you asked that we address overall aviation infrastructure needs, particularly in light of estimates which we have all seen ranging into the scores of billions of dollars. Regrettably, it is very difficult to determine the total financial need for the system. A comprehensive document such as the National Plan of Integrated Airport Systems (NPIAS) cannot keep pace with either the changes in the ways in which carriers provide their services or the wants and needs of customers.

What we really need is an effective system of checks and balances between the airports and the airlines. No single party should have unilateral authority to commit dollars to large projects, especially if the other party is paying the bulk of the costs.
If we need a Pontiac, let's not buy a Cadillac.

Airports, AIP and PFCs

Given the proliferation of Passenger Facility Charges (PFC), which now provide over $9.2 billion to airports for capital improvements (with another $1.9 billion in the pipeline), we believe that funding levels in the range of $1.75 to $2.0 billion per year -- are adequate. Increasing the AIP program would not be fiscally responsible considering all the other budgetary priorities; however, the program should not be cut, either. The simple reason for this is that airports are a part of a national system, and as such must remain under some measure of control. Maintenance of the AIP program at this level will allow FAA to offer meaningful dollars to airports, while at the same time ensuring that airport managers and those to whom the airport managers report remain in compliance with the requirements which come along with Federal grants. To provide higher AIP levels would strain the Federal budget (albeit some would argue that airlines and their customers pay tremendous amounts of money in Federal passenger and cargo taxes into a Trust Fund that is encumbered for other purposes). To provide less would weaken the control Congress and the Administration must maintain in order to ensure that the national system of airports remains a truly national system.

Allocation Methodology

Between set asides, regional allocations, airport projects and airway funding, there is a severe disconnect between the funds Congress makes available through the authorization and appropriations process and meeting actual system needs. First, let's look at the airport side.

FAA does not allocate its discretionary AIP dollars based on a national system perspective. Monies are allocated according to indicia such as size, number of airports, operations, but the most important factor of all -- need -- of the airports in the regions vis-a-vis the national system, is absent from the evaluation. The net result of this regionally-balanced approach to AIP funding, is that we have a nationally unbalanced system. High traffic airports in critical locations with important capacity or safety projects may find themselves without funds, while airports in other locations, which are promoting lower priority projects may be awash in money. The fact is the FAA's allocation of funds forces some regional administrators to spend AIP dollars on low priority projects or lose them. We recommend that procedures for allocation of discretionary AIP funds be established which reflect regional operational levels or some other indicator of need that would result in the distribution of AIP money to projects that have been prioritized on a national, system-wide basis.

Another problem exists with respect to the allocation of funds, time, effort, and attention between airways and airports. More focus is directed at airport remedies to the congrestion problem than airways remedies. Is this because it is easier to identify airport projects or it is are easier to complete airport projects? Unfortunately, the fundamental problem with congestion in the airways system, not airport congestion. As can be seen from Exhibit II, a chart which quantifies aircraft operating costs attributable to delays by phase of flight, 80% of the aircraft operating costs of delays, that is the taxi out and airborne phases of delay, is susceptible to airways remedies, not airport remedies.

In only a few places in the entire country can delays be remedied by airport construction. Yet the myth persists that massive federal airport funding is necessary to reduce delays. Mr. Chairman, if there were a way environmentally, politically, or physically to build additional airport capacity at LaGuardia, Kennedy, and O'Hare to name but three airports, the airlines would line up to pay for that expansion.

Letters of Intent

One additional comment with respect to AIP. The FAA's Letter of Intent program has, in our opinion, run amuck. At the current funding level, over 70 percent of the discretionary dollars are already dedicated to 49 airports under the LOI program. While many of the projects under LOI commitment have airline support, so too do projects at other airports which will not receive any AIP money because of this poor advance planning on FAA's part. The General Accounting Office earlier this year released a study of the program, and made three recommendations for improving the management of that program. We fully concur with the GAO recommendations, and are looking forward to working with FAA on the implementation of its forthcoming LOI policy statement, which will bring greater controls and tighter eligibility to the program. (exhibit III)

Passenger Facility Charges

Mr. Chairman, you requested that we specifically comment on how the Passenger

Facility Charge Program has contributed to meeting aviation infrastructure needs. We believe that the Passenger Facility Charge program can be a very useful tool, provided that the program is not abused. There are many examples of airports which seek to build "field of dreams" projects which may make good local political sense, but do not make good airline operations sense. The previously mentioned New York train is the most prominent example. So too is a proposed $ 130 million plus international terminal at Baltimore. FAA has been somewhat responsive to airline criticisms of specific projects, but we continue to believe that there is unnecessarily absent from the statute a precise Congressional direction that all PFC projects must have a clear, aviation-related need in order to be approved.

I think it is also important to note that of the $9.2 billion authorized for PFC collections, only $1.2 billion, or 13 % of the total, is earmarked for airside projects such as runways, taxiways, aprons, and lighting -- projects that reduce delays and cut costs. The other 87% is earmarked for such things as new airport terminals, people movers, and roads -- many of which may be needed but few of which have a direct bearing on the largest infrastructure related problem -- airside congestion and delays. Thus the PFC program was no panacea for airport congestion.

CIP AND FAA MANAGEMENT

For more than 10 years the FAA has been engaged in a massive modernization program, first dubbed the National Airspace System Plan, now called the Capital Improvement Program. This decade long, $10 billion program has mushroomed into an 18 year, $30 billion plus program. As the airlines struggle to return to profitability, the key to fulfilling this goal is better utilization of equipment and flight crews. But the more time which is spent suffering through delays, the more must be spent on equipment, crew costs, and fuel. Unless we see significant improvements in the air traffic control system, the number of delays is sure to grow as air travel grows in the years ahead.

The Advanced Automation System debacle represents but one example of the flaws in the current structure of the FAA's procurement, personnel, and budgeting nightmare. The Administration has promised a plan for establishing a new federal corporation to run the air traffic control system. While the devil is in the details, we look forward to this plan with great anticipation. For surely, there is little likelihood that a new system, which benefits from our experience, will be any more costly or inefficient than the current system.

Reform of the system through the creation of a government controlled corporation, just as reform of the airport rates and charges dilemma, holds the greatest promise for insuring that our national air transportation system will flourish. And the irony is, both changes would result in greater efficiency and a higher margin of safety, with commensurate benefits for the economy, and no additional government spending.

Mr. Chairman, I would be pleased to respond to any questions which the subcommittee has on this most important subject, our aviation infrastructure.

Exhibit I

AIRPORT CHARGES RISING RAPIDLY

Landing Fee and Rental Costs per Passenger

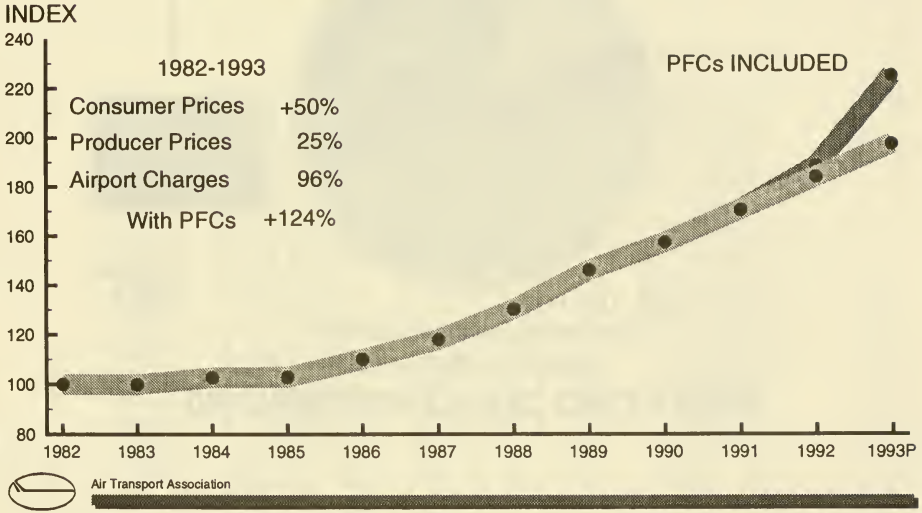


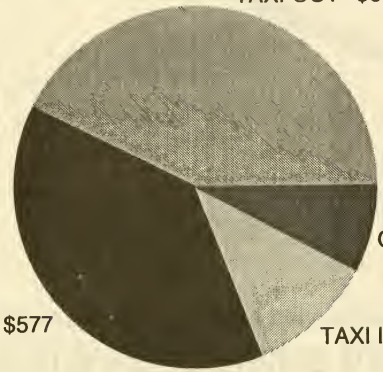
Exhibit II

DISTRIBUTION OF ATC DELAY COST

BY PHASE OF FLIGHT

Aircraft Operating Costs Only

1993
($Millions)



Air Transport Association

with letters of intent than FAA had anticipated. Although future funding levels are difficult to predict, it would be prudent for FAA to make commitments under letters of intent on the basis of conservative assumptions about the program's discretionary funding levels—such as the lowest level in the last 5 years. This conservative approach would give FAA greater assurance that any future cuts in discretionary funding would not affect (1) existing commitments under letters of intent or (2) FAA's ability to meet other airport improvement needs.

Recommendations

To ensure that letters of intent are used in accordance with congressional direction, we recommend that the Secretary of Transportation direct the FAA Administrator to

- set a timetable to establish a goal for improving systemwide capacity and a definition of a significant capacity enhancement in relation to this goal, and analyze projects proposed for letters of intent against this goal and definition;
- provide justification and obtain approval from the Congress if the agency wants to expand the statutory criteria for the use of letters of intent beyond projects that significantly enhance systemwide capacity; and
- plan commitments under letters of intent for each fiscal year on the basis of more conservative assumptions about future discretionary funding levels in the Airport Improvement Program.

Agency Comments

As requested, we did not obtain written comments on a draft of this report. However, we discussed our findings and recommendations with FAA's Manager, Airports Financial Assistance Division, and Manager, Programming Branch, and with other Department of Transportation officials. These officials provided us with some clarifying information, and we revised the text as necessary. FAA officials generally agreed with our recommendations. The agency's task force to revise LOI policy will address our concerns about ensuring that (1) LOIs are used only for projects that significantly enhance systemwide capacity and (2) an adequate level of discretionary funds is available.

Scope and Methodology

To address our objectives, we performed work at FAA headquarters in Washington, D.C.; FAA's Central Region in Kansas City, Missouri; and FAA's Southern Region in Atlanta, Georgia. We interviewed FAA headquarters, regional, and field officials about the review and approval process for LOIs.

NATIONAL
BUSINESS AIRCRAFT
ASSOCIATION, INC.

1200 Eighteenth Street NW
Washington, DC 20036-2598
Telephone: (202) 783-9000
FAX: 202 331-8364

Testimony
of

John W. Olcott
President
National Business Aircraft Association

Before
the

Subcommittee on Investigations and Oversight
Committee on Public Works and Transportation
U.S. House of Representatives

Hearing
on

Aviation Infrastructure Needs

Thursday, April 28, 1994
2167 Rayburn House Office Building
Washington, D.C.

Mr. Chairman, Members of the Subcommittee, as President of the National Business Aircraft Association (NBAA), I appear before you today on behalf of more than 3,300 Member companies which own and operate general aviation aircraft as an aid to the conduct of their business, or are involved with business aviation. We appreciate the opportunity to present our views concerning aviation infrastructure needs and, specifically, the needs of the business aviation community in this regard.

Before proceeding, I would respectfully request that two publications be placed in the record of this hearing at this point --- NBAA's *ISSUES '94* document which details the Association's legislative and regulatory agenda for the year and a brochure associated with the *NO PLANE. NO GAIN.* advocacy program initiated by NBAA and the General Aviation Manufacturers Association (GAMA). Our agenda relates in part to the focus of the Subcommittee's current considerations and the advocacy program is designed to increase the awareness of the value of business aviation to the nation's economy and transportation system. We believe that if our community is fully understood those who are considering it for one reason or another, including this Subcommittee, will have a clearer basis from which to make related decisions.

Aviation is vital to the viability and growth of the nation's economy and its transportation system. Thus, investment in the infrastructure that supports aviation has a significant economic impact, directly and indirectly. If that investment is inadequate to meet the needs of the users of the system, the economy and society in general will suffer. NBAA Member companies are acutely aware of this because they earn annual revenues in excess of $3 trillion --- a number that

is about half of the Gross National Product --- and employ more than 16 million people worldwide.

Airports and the Air Traffic Control (ATC) system are the basic components of the aviation infrastructure. Although, until recently, the economy had been weak resulting in a depressed marketplace for aviation products and services, we should not allow this experience to cloud our vision as to the future growth in demands on the national air transportation system and the concomitant growth in needs for investment in the related infrastructure. The various demands will require an adequate system of airports of all sizes and types as well as the airways and technology to manage them.

With regard to airports ... Airport Improvement Program (AIP) funding, reliever airports, runways, landside development and environmental protection rules and regulations are areas of specific interest to NBAA Member companies. As you know, the airline/airport fee dispute, which is basically in response to the Supreme Court's decision on Kent County, has affected the reauthorization process considerably. The "moratorium" bill passed by the Senate last week has released $800 million for AIP spending, but more work will be required to resolve this situation so as to release the remaining $869 million anticipated for AIP in Fiscal Year 1994. First, NBAA appreciates the concerns of the airlines relative to the fees they are charged, but we agree with the Supreme Court that the proper venue for fee dispute resolution is the Office of the Secretary of Transportation. Secondly, and more to the point of today's hearing, the Association is seriously concerned with the impact of this situation on funding for reliever and smaller airports. We are concerned with the Administration's proposal to reduce set-asides for reliever

airports which officials at the Department of Transportation (DOT) say will be "balanced out" to some degree by additional funds made available for this purpose through Passenger Facilitation Charges (PFCs). Whatever the case, it seems there will be a reduction in this area of funding. This, combined with the Congressional Budget Office (CBO) report that "small reliever airports, financed by the FAA with expectation that they would draw general aviation aircraft away from major airports, have not done so --- thus some would argue against federal subsidies to these airports," reflects limited, if any, recognition at the highest levels of government of the important role of small reliever airports in our system. In fact, the CBO is not looking at the value of reliever airports correctly. These types of airports actually have proven to be effective elements of aviation complexes in the major hub airport communities, and are designed to ensure that capacity is not constrained in these communities as those segments of the aviation community that utilize them grow.

NBAA believes there is a need for new and improved runways at the nation's airports. This includes consideration of better "all-weather" runway materials and designs as well as short parallel runways to enhance safety and capacity at airport facilities.

NBAA strongly recommends that landside development programs be limited to projects within the "curbside" of airport facilities, and preferably the edge of the tarmac. Furthermore, NBAA suggests that access roads to the airport be funded by the Highway Trust Fund.

Finally, it is important for this Subcommittee to understand the impact the Environmental Protection Agency (EPA) has on airports and infrastructure. Quoting from NBAA's *ISSUES '94*, "Restrictions on aircraft emissions are being imposed and considered on the federal and state

level to ensure compliance with air quality standards established by the EPA and implemented and enforced by related state agencies. Likewise, airport authorities are now subject to EPA clean water regulations (storm water discharge permit actions) affecting all airport tenants, as well as provisions to protect wetland areas which may inhibit runway expansion. NBAA asserts that these regulations must achieve a balance between preservation of the environment and the ability of the aviation community to effectively utilize the national air transportation system."

With regard to the ATC system, we believe appropriate investment in the aviation infrastructure can result in more efficiencies and capacity within the existing structure. The National Noise Policy and the positive effect it has had on the capacity of the system must be preserved. And funding for many valuable research, engineering and development (R,E&D) projects related to the FAA and the National Aeronautics and Space Administration (NASA), including noise technology research, should be maintained at higher levels --- the level should reach $500 million per year, instead of the approximately $300 million level proposed by the Clinton Administration. Specifically, NBAA believes FAA should proceed with the Advanced Automation System (AAS) program, despite the cost overruns that have been highlighted recently, because the FAA and its leadership have responded appropriately to the situation and we are encouraged that effective results will be forthcoming. We strongly support rapid transition to GPS, but urge continued utilization of ILS technology as GPS is phased in. We also caution against premature phase-out of Loran C --- indeed, Loran C may provide back-up as our nation transitions to a navigation system based on GPS. Funding for MLS should be completely eliminated. And, finally, we encourage appropriations to support research focused on improving

the ability of our aviation system to deal with the number one safety hazard and cause of congestion and delays --- weather.

In order for the aviation infrastructure to provide the support required by our national air transportation system it must be managed effectively. Thus, to the extent this Subcommittee affects initiatives to reform the Federal Aviation Administration (FAA), we believe it important to familiarize you with our Members' views on the "corporatization" proposal that has been promoted by the Administration and viewed by many in the aviation community as the panacea for procurement, personnel, and budget and funding reform. Although NBAA welcomes the new opportunity that has evolved during the past few years for reform of the FAA and our national aviation system in these three major areas --- and the healthy debate that has been occurring in this regard since early last year --- we have serious doubts about the "corporatization" concept. NBAA has recommended FAA reform, consistently, for many years, and believes that it can be achieved through a well-conceived program for change within the existing structure. We believe the revenue projections of the corporatization concept are overestimated; that the cost factors associated with a federal corporation work force are underestimated; and the efficiencies expected cannot be guaranteed. It is not as much a structural problem as it is a management challenge. Furthermore, how and why did the Clinton Administration's National Performance Review determine that changing the culture of government service and improving the government within existing structures (also called "Reinventing Government") would work for the entire government with the exception of the FAA?

NBAA recommends instead a fixed-term of 5-7 years for the FAA Administrator to

ensure stability in that position and the agency that position has responsibility to lead. We encourage regulatory reform to eliminate unduly burdensome and, at times, contradictory rules and regulations. (In that vein, we hope the new regulatory review process in the current Administration proves more successful than the process initiated in the previous Administration.) The Association supports enhancement of the FAA's economic analysis capability to ensure an effective balance between the Agency's actions and practical economic realities. And, there needs to be full utilization of the advisory committee process so that the expertise within the aviation community can have an appropriate effect on the decisions made by FAA. (One specific example is the work of RTCA which needs continued support so that it may continue to assist the FAA and the entire aviation community the way it has over the years.) Again, these are reforms that can occur within the existing structure and we encourage this Subcommittee to consider our positions as it fulfills its role in this key aviation issue area.

With regard to funding for infrastructure in general, NBAA is on record supporting multi-year funding for all FAA programs so as to establish a level of certainty as this country endeavors to modernize and enhance the capability and capacity of its air transportation system. To quote *ISSUES '94*, "Funding should be timely, adequate and flexible to meet system needs and consistent with the Congressional mandate that Airport and Airway Trust Fund revenues be used solely for aviation purposes." Funds for the aviation system should be collected fairly and various fees should be set at reasonable levels. Although it has been suggested that general aviation doesn't pay its fair share, NBAA believes that the contribution of general aviation, and specifically NBAA Member companies, has not been fully recognized and appreciated. In light

of political realities, however, it is difficult to assume or expect that the general public will be asked by the Administration or Congress to contribute much more, if anymore, to fund the aviation system, although comprehensive and fair analysis and review will probably suggest that the general public, not general aviation, should be carrying more of the burden than currently. But, if you consider the fact that the bulk of the aviation fuel taxes paid into the Aviation Trust Fund and the General Treasury are paid by NBAA Member companies and that the bulk of the revenue from the 10 per cent ticket tax on full fare airline tickets is also paid by those companies, it would be understandable why we question those who would have us pay more for the system. Add to that the valuable contributions NBAA Member companies and business aviation make to the nation's economy and its transportation system, the argument is further strengthened. Having observed this, we are still prepared to pay our share, as long as we receive the services we require and the services we are paying for and if we have appropriate representation in the expenditure of related funds.

There are a number of tax issues on our annual agenda that, obviously, don't fall within the jurisdiction of this Subcommittee, but are the means used for generating revenue to fund the aviation infrastructure. In general, we do stress the importance of fairer tax treatment of the business aviation community. One example of our concern in this regard is the fuel tax increase approved by Congress last year which exempted the airlines because of their plight. The general aviation industry is subject to the tax increase despite its plight. A better understanding of the value of this form of transportation might have led to similar treatment for general aviation. Another unfair situation had been under consideration until recently. The proposal would

have established an annual fee for business aircraft (turbo-props and jets) to help fund the Air Traffic Control (ATC) system --- if the system is corporatized or, possibly, even if it remains within the FAA. This is similar, with the exception of the sole focus on business aircraft, to the general aviation aircraft registration fee proposal that arose but dissolved in Congress last year. Again, fairness is our goal, and fortunately those who were considering this proposal apparently have developed a better understanding of the business aviation community and its contribution to the economy and the national air transportation system, as well as the basic unfairness of that proposal.

In the international aviation arena, NBAA supports increased funding for the FAA certification and harmonization program to improve it and reduce the burden of international regulations on U.S. aviation interests. We also recommend funding for increased staffing of "overseas" inspection and certification services that facilitate international operations of U.S. aircraft operators. Specifically, it is important that U.S. business interests, including NBAA Member companies, have the ability to utilize business aircraft in the international aviation system to compete in the global marketplace. Clearly, it is important that the ability of all U.S. aviation interests have the ability to operate in the international aviation infrastructurel.

I would be remiss if I did not utilize this opportunity to encourage the support of the members of this Subcommittee for the General Aviation Revitalization Act which was approved 91-8 by the Senate a few weeks ago. This legislation is vital to the future viability and growth of the general aviation industry and NBAA recommends that each of you review and support the related actions of your colleagues Representatives Glickman (D-KS) and Hansen (R-UT).

To conclude, the most important consideration for this Subcommittee and the entire aviation community is ensuring access to the air transportation system and the aviation infrastructure. This month, NBAA will be submitting comments to the FAA which is exploring the viability of the High Density Rule (HDR) and the experience the aviation community has had with the HDR airports. We encourage this Subcommittee to provide funds to ensure fair and equal access to these airport facilities, as well as the entire national system of airports and navigable airspace. To quote *ISSUES '94* once again, "NBAA views system access as paramount in most, if not all, of the issues on the Association's 1994 legislative and regulatory agenda. To ensure fair and equal access to airports and navigable airspace (domestically and internationally), NBAA advocates effective and rational reform of the FAA; healthy funding for system capacity, equipment, modernization, operations and management; fair and reasonable taxes and fees; responsible environmental laws; elimination or modification of conflicting governmental action; international aviation policy respectful of all U.S. aviation interests; thoughtful research and development; and practical product liability reform."

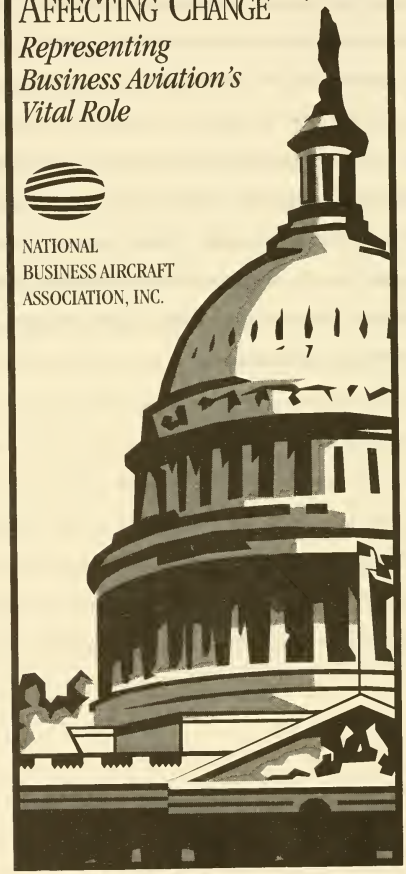
Thank you.

ISSUES '94

AFFECTING CHANGE

Representing Business Aviation's Vital Role

NATIONAL
BUSINESS AIRCRAFT
ASSOCIATION, INC.



Introduction

President Clinton has issued a clarion call for change to ensure the viability and growth of our nation. The National Business Aircraft Association (NBAA) views this as a capital opportunity to affect change related to aviation and to represent the vital role of the business aviation community.

NBAA's legislative and regulatory agenda, presented in *Issues '94*, details key issues the Association will be facing as it endeavors to take full advantage of this opportunity. In *Issues '94*, we outline the position of the Membership relative to each challenge.

Specifically, NBAA will continue it's leadership role on issues ranging from the reform of the FAA to the tax treatment of business aircraft to system access. And we will focus on satisfying Member needs and furthering the cause of business aviation consistent with NBAA's vision of being *the* effective force for improving safety, efficiency and acceptance of business aviation.

An improving economy, lower than anticipated federal deficits, higher investor expectations, increased flight activity and replacement of and additions to aircraft fleets by the business community have created a positive and enthusiastic environment for efforts related to this agenda.

John W. Olcott
President

Affecting Change

Representing Business Aviation's Vital Role

FAA Reform

- Corporatization
- FAA Administrator Effectiveness
- Regulatory Reform
- Economic Analysis Capability
- Advisory Committee Process

FAA Funding

- Reauthorization
- Fair Share

Taxes

- Affiliated Group Exemption
- Empty Seat Rule
- Fuel Taxes
- Sales and Use Taxes
- Personal Property Taxes
- Aircraft Registration Fees

Environmental Concerns

- National Noise Policy
- Environmental Protection Agency

Conflict Resolution

International Interests

Research and Development

Statute of Repose

System Access

FAA Reform

CORPORATIZATION

ISSUE: The Clinton Administration proposes establishment of a federal corporate entity to manage and fund the Air Traffic Control (ATC) system. Although there is support from certain segments of the aviation community for this "corporatization" of the Federal Aviation Administration (FAA), key Congressional aviation officials are opposed to the proposal and have expressed an interest in working with NBAA, and others who have doubts about the proposal, for effective reform of the FAA.

POSITION: NBAA has recommended FAA reform for many years due to concerns with the impact of politics on the related budgeting process, inefficient procurement procedures, and unproductive personnel constraints. NBAA doubts that a corporate structure will be effective in confronting these problems associated with the FAA and the national air transportation system. The Association believes solutions can be found through a strong, well-conceived program of reform developed through healthy debate of related issues before appropriate Administration, Congressional and industry forums. Accomplishing much-needed political, procurement and personnel reforms should be the focus of our collective energies and wisdom, not a predetermined method for doing so.

FAA ADMINISTRATOR EFFECTIVENESS

ISSUE: There have been eleven FAA administrators in the past fifteen years, and those who have held the position have been limited in their authority and control of the agency. This has limited the ability of the agency to *productively* accomplish its mission.

POSITION: NBAA asserts that effective reform must include a multi-year (five to seven years) fixed term for the FAA Administrator, combined with appropriate empowerment, to ensure stability in leadership and direction at the agency.

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REGULATORY REFORM

ISSUE: The FAA regulatory process has been unnecessarily burdensome to the aviation industry. Further, this process has been too slow in establishing a number of much-needed rules and procedures.

POSITION: NBAA supports modification and elimination of inappropriate or obsolete regulations. The Association encourages the FAA to make decisions on pending and future rules and procedures in a more timely manner, and ensure they are based upon documented and practical analysis and significant user input. NBAA is hopeful that the new DOT/FAA regulatory review process will serve as a vehicle for reform.

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ECONOMIC ANALYSIS CAPABILITY

ISSUE: In some cases, FAA regulations have resulted in financial difficulties for the aviation industry reflecting limited attention to the economic ramifications of the agency's actions.

POSITION: NBAA recommends enhancement of the FAA's economic analysis capability to ensure existing and future regulations are justified on a cost/benefit basis.

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ADVISORY COMMITTEE PROCESS

ISSUE: The Clinton Administration has stressed the importance of government/industry partnerships to help "create a government that works better and costs less." The advisory committee process, which allows direct involvement of the user community in FAA decision-making, has been effective when utilized. However, the value of this approach has not always been recognized.

POSITION: NBAA encourages full utilization of the advisory committee process to ensure the insight and expertise of various segments of the aviation community are considered and reflected in decisions made by DOT and FAA.

FAA FUNDING

REAUTHORIZATION

ISSUE: Reauthorization of FAA programs is a high priority for the Administration, Congress, and the aviation industry this year. Legislative measures to accomplish this objective are focused on multi-year funding for Facilities and Equipment (F&E), Re-

search, Engineering and Development (R,E&D), and the Airport Improvement Program (AIP). Authorization for FAA Operations and Maintenance (O&M) is also being addressed.

POSITION: NBAA supports multi-year funding for all FAA programs to modernize and enhance the capacity of the air transportation system. Funding should be timely, adequate and flexible to meet system needs and consistent with the Congressional mandate that Airport and Airway Trust Fund revenues be used solely for aviation purposes.

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FAIR SHARE

ISSUE: The general aviation community, including business aviation, contributes to the Airport and Airway Trust Fund through payment of fuel taxes. It has been suggested that this does not represent general aviation's fair share of the cost of the national air transportation system. The issue of who should pay what share of the costs of the system is a debate that may evolve during the year.

POSITION: NBAA Member Companies are willing to pay their fair share of the costs of the system as long as they are funding only those services required, they have input into what services are provided, and if those services are provided effectively and efficiently. The Association recommends that the vital role of general aviation in the nation's air transportation system and the economy be taken into account when considering the industry's fair share, as well. Further, comprehensive and fair analysis and review will probably suggest that the general public, not general aviation, should be carrying more of the burden than it currently does.

TAXES

AFFILIATED GROUP EXEMPTION

ISSUE: The Internal Revenue Service (IRS) Code exempts companies classified as an "affiliated group" from remitting the transportation tax on intercompany chargebacks; allowing payment of the fuel tax instead. However, if payment for air transportation is accepted from an outside source this exemption is compromised. Different tax treatment of affiliated groups and other corporations is contrary to Congressional intent and creates a tax liability trap for unsuspecting businesses.

POSITION: NBAA supports consistent interpretation and clarification of the Affiliated Group Exemption to apply on a flight-by-flight basis.

EMPTY SEAT RULE

ISSUE: Current IRS rules require that at least fifty per cent of a corporate aircraft be utilized by business passengers before any non-business passengers can travel without incurring a tax liability. This regulation is confusing and burdensome for taxpayers and has failed to increase revenues.

POSITION: NBAA supports modification of this rule to allow that for every employee traveling on business, one non-business passenger (employee, spouse or dependent child) may travel without incurring a tax liability.

FUEL TAXES

ISSUE: Fuel taxes are imposed on aviation at all levels of government, usually in the form of an excise tax and, in some states, a sales tax. The federal government and approximately thirty states dedicate all or a portion of such taxes for aviation purposes.

POSITION: NBAA recommends that these fuel taxes be imposed fairly and equitably and that revenue collected always be dedicated and used for aviation purposes.

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SALES AND USE TAXES

ISSUE: States allow for certain types of operators to be exempt from payment of sales and use taxes on the purchase of aircraft. While these exemptions usually apply to commercial (FAR Part 121 and certain Part 135) operators, there are many cases of discrimination against on-demand FAR Part 135 operator.

POSITION: NBAA believes sales and use tax laws should be imposed fairly on all categories and classes of aircraft users.

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PERSONAL PROPERTY TAXES

ISSUE: Several local governments impose personal property taxes on aircraft. These taxes vary greatly from community to community. In some instances, the rate of personal property taxes discourages

aircraft owners from basing their aircraft at certain airports.

POSITION: NBAA asserts that any personal property taxes imposed by local governments be fair and reasonable.

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AIRCRAFT REGISTRATION FEES

ISSUE: Although proposed increases in federal registration fees for general aviation aircraft were recently averted, the potential exists for further consideration this year. In addition, approximately twenty-five states impose some form of aircraft registration fee on general aviation aircraft to fund general aviation projects.

POSITION: NBAA believes arbitrary and unjustifiable increases in federal registration fees for general aviation aircraft would be detrimental to the viability of the general aviation community. Further, existing state registration fees should remain reasonable and be dedicated to aviation.

Environmental Concerns

NATIONAL NOISE POLICY

ISSUE: The Airport Noise and Capacity Act of 1990 established the National Noise Policy and embodies rules for community aircraft noise restrictions. In addition, it provides direction with regard to the "phase out" of Stage II aircraft over 75,000 pounds. However, there are still threats to the delicate balance between users of the national air transpor-

tation system and local airport communities impacted by aircraft noise.

POSITION: NBAA stresses the importance of preserving the integrity of the National Noise Policy and encourages the FAA to continue strong enforcement of related rules and regulations.

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ENVIRONMENTAL PROTECTION AGENCY

ISSUE: Restrictions on aircraft emissions are being imposed and considered on the federal and state level to ensure compliance with air quality standards established by the EPA and implemented and enforced by related state agencies. Likewise, airport authorities are now subject to EPA clean water regulations (storm water discharge permit actions) affecting all airport tenants, as well as provisions to protect wetland areas which may inhibit runway expansion.

POSITION: NBAA asserts that these regulations must achieve a balance between preservation of the environment and the ability of the aviation community to effectively utilize the national air transportation system.

Conflict Resolution

ISSUE: Federal and state agencies have generated regulations that conflict. Conflicts exist between the FAA and IRS as to the definition of commercial aviation; the FAA and the Departments of Energy and Interior relative to airspace, and the FAA and the Federal Communications Commission regarding construction of radio towers. Some situations exist

which render it impossible to comply with regulations from more than one agency.

POSITION: NBAA believes conflicting regulations should be clarified or eliminated quickly, if not immediately. We urge a process be established to ensure timely and effective resolution of conflict in matters of joint or overlapping jurisdiction by federal and state agencies.

International Interests

ISSUE: The business aviation community is threatened by barriers to access which are in place or being contemplated for various reasons worldwide. Further, U.S. international aviation policy does not always consider the needs of the entire aviation community, including business aviation.

POSITION: NBAA stresses the need for fair and equal access to the global aviation environment to ensure businesses are able to compete economically in the fast-paced global marketplace. The Association urges Congressional and Administration officials to protect and enhance the rights of the business community to use U.S.-registered aircraft worldwide.

Research & Development

ISSUE: The nation's air transportation system places demands on the FAA in the area of air traffic management and control as well as noise and emissions. The FAA requires an adequate funding level to keep pace with technological advances.

POSITION: NBAA recommends increasing annual funding of the FAA's R,E&D program to the $500 million level in the near future to affect air traffic control and environmental considerations as well as

to facilitate certification and safety oversight of emerging technologies in aircraft manufacture and operations. The Association also encourages close coordination between NASA and FAA to establish more timely and efficient certification of advanced aviation technology.

Statute of Repose

ISSUE: The General Aviation Revitalization Act of 1993 (H.R. 3087 and S. 1458) provides that no civil action for harm resulting from a general aviation accident can be brought against a general aviation manufacturer if the accident occurred more than fifteen years from the date of delivery of an aircraft. The existing product liability system has resulted in a significant rise in unit costs of general aviation aircraft due to diminished production, the loss of this country's lead in light aircraft manufacturing, limited availability of parts for older aircraft, and a reduction in industry employment by half.

POSITION: NBAA supports enactment of this legislation, which has broad and substantial Congressional support. If a product has functioned satisfactorily for fifteen years, it has demonstrated that its original design is not defective and therefore should not be subject to a liability suit. Satisfactory service over a long period should be sufficient evidence that the product reflected the existing state-of-the-art and that the manufacturer met the legal obligation to provide an appropriate design at the time of delivery. Enactment of H.R. 3087 and S.1458 will help revitalize the general aviation industry.

System Access

ISSUE: Congress has mandated that there be fair and equal access to the nation's airports and navigable airspace. However, system access has been threatened in the past and potential exists for further attempts to limit or restrict access in the future.

POSITION: NBAA views system access as paramount in most, if not all, of the issues on the Association's 1994 legislative and regulatory agenda. To ensure fair and equal access to airports and navigable airspace (domestically and internationally). NBAA advocates effective and rational reform of the FAA; healthy funding for system capacity, equipment, modernization, operations and management; fair and reasonable taxes and fees; responsible environmental laws; elimination or modification of conflicting governmental action; international aviation policy respectful of all U.S. aviation interests; thoughtful research and development; and practical product liability reform.

NBAA Issues '93 Successes

- Repeal of Luxury Tax, which stimulated aircraft investment and reflected recognition of business aviation's contributions to productivity.
- Positive reaction to NBAA's call for clarification of Affiliated Group Exemption, which resulted in real opportunities for this issue in second session of 103rd Congress.
- Congressional reaffirmation of opposition to diversion of funds from Aviation Trust Fund.
- Prevention of enactment by Congress of new increased general aviation fees.
- Increased support for Statute of Repose legislation in the House of Representatives (274 co-sponsors) and Senate (50 co-sponsors).
- Positive reaction by Congressional leaders to FAA reform in areas of Politics, Procurement and Personnel.
- Reinforcement of National Noise Policy in various public documents, including Airline Commission report.
- Withdrawal of new landing fee proposal by Massachusetts Port Authority (Massport).
- Support for Congressional appropriations process, which resulted in $169 million for reliever airports.
- Leadership role with National Aviation Associations Coalition and participation in other coalitions, FAA Challenger Series, and various advisory committees, which continued incremental process of encouraging and developing concepts to achieve air traffic modernization.
- Funding for research and development maintained, and enhanced FAA/NASA working relationship on general aviation technology through key role in related NASA task force.
- Statements concerning improvement and standardization of global air traffic systems reflected in Airline Commission report and federal government policy.
- Positive meetings with officials of Joint Aviation Authorities in Europe and aviation representatives from China and Japan.

NBAA Government Affairs

For additional information, please contact the NBAA Government Affairs Department at (202) 783-9260.

Pete West
Vice President, Government Affairs
(202) 783-9262

Nel Sanders
Senior Manager, State and Tax Issues
(202) 783-9266

Lisa Paitz Spindler
Assistant to the Vice President, Government Affairs
(202) 783-9263

NATIONAL BUSINESS AIRCRAFT ASSOCIATION, INC.
1200 Eighteenth Street, NW
Washington, DC 20036-2598
Telephone: (202) 783-9000
FAX: (202) 331-8364

NBAA

NBAA represents the aviation interests of over 3,000 companies which own and operate general aviation aircraft as an aid to the conduct of their business, or are involved with business aviation. NBAA Member companies earn annual revenues in excess of $3 trillion – a number that is about half of the Gross National Product – and employ more than 16 million people worldwide.

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How do you spot a great investment?
Take a flyer.
NO PLANE
NO GAIN
Important news about the performance
of companies operating business aircraft.

Why, in an era of cost control, stockholders can be pleased to see the company purchase an airplane.

Put yourself in the shoes of an active, involved stockholder.

You're interested in the performance of the companies you own and monitor each one's performance regularly.

So imagine, for a moment, that one of your companies announces a plan to purchase an airplane. Management says the plane will boost productivity, allow for more and better on-site review of operations and make it attractive for customers to visit the company's headquarters. Is your reaction one of concern? Do you conclude that costs are running out of control? Is this a "perk?"

Or, is it encouraging news for the stock? The company may be investing wisely in an asset that can save management time, boost productivity and enhance its overall financial results.

Either way, you're faced with an investment decision: Do you sell, hold or buy more of this company's stock?

If you have any doubt, you may be surprised, even pleased, at the findings of new research.

Arthur Andersen Research: Compelling new statistics on business aviation

Arthur Andersen, a leading global accounting firm, has completed a study of companies that purchased and operated business aircraft versus those that did not.

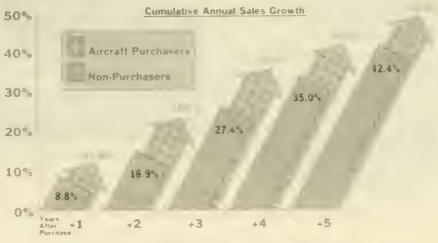
The report addresses several important measures of performance:

- Sales growth
- Earnings growth
- Long-term return to shareholders
- Productivity

This research suggests that business aircraft may provide a measurable and meaningful competitive advantage and that, over the long haul, the actual business performance of companies purchasing and operating aircraft is superior to non-operators.

NO PLANE. SLOWER SALES GAIN.

Companies That Purchased Aircraft Show Greater Post-Purchase Sales Growth



Based on public companies that purchased business aircraft between 1986-1990 with sales of $1 million during year of purchase. Source: Arthur Andersen Business Aviation Performance Study.

Sales Growth: Operators fly higher

In one segment of the study, Arthur Andersen examined the 1986–1990 sales growth of over 700 public companies per year.

Companies that purchased airplanes during this period were compared to all other public companies of similar size. Sales levels were recorded for the year of purchase and up to four subsequent years.

Arthur Andersen found that the sales of companies purchasing new airplanes grew, on average, at a higher rate than non-purchasers.

Three years after purchase, for example, the airplane buyers achieved an average 8.5 percent higher level of sales. For a $1 billion company, that could mean an extra $85 million in sales.

This research included more than 70 percent of all airplane sales to publicly-held companies and represented a wide variety of business types, including manufacturing, distribution and service companies.

Business Aircraft: Earning their keep in earnings per share

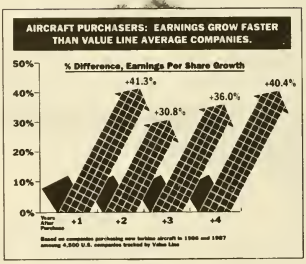
Perhaps nothing is more important to the investor than growth in earnings per share.

Arthur Andersen reviewed the findings of a study that showed companies purchasing airplanes gaining a 41.3 percent advantage in earnings per share growth rate after one year and averaging 37.1 percent over four years.

The study included all public companies that purchased turbine airplanes in the years 1986 and 1987 and compared their earnings per share growth over the following four years to that of the 4,500 public companies that make up the Value Line Index.

"On average, among the 766 companies studied each year, those that acquired business airplanes experienced greater sales growth in the years following the purchase than those that did not."

—Arthur Andersen
Business Aviation Performance Study



No plane. Smaller stock market gains.

Savvy investors focus on total return over the long haul.

Do companies that operate aircraft perform as well as non-operators over many years?

The answer is: They perform better.

FORTUNE's honor roll—92% own or operate aircraft

If there ever was an "honor roll" to which corporate management should aspire, it's *Fortune* magazine's annual list of 50 companies with the "Highest Total Return to Investors—10 Years."

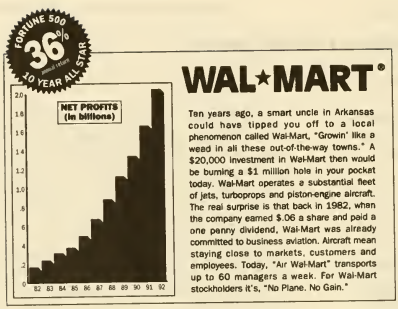
These companies achieved an astounding 30 percent compound average return each and every year between 1982 and 1992, measured by stock price gains and dividends happily received by their farsighted shareholders.

This list is dominated by aircraft owners and operators. Forty-six out of fifty companies use business aircraft to gain time, flexibility and productivity, as well as generous gains for their stockholders.

What kind of company makes it to *Fortune*'s honor roll list? These are great companies. Focused, well managed and aggressive. But they're not necessarily huge multinationals, either. While some are household names such as Coca-Cola, Merck, Kellogg, Philip Morris and others, many are unfamiliar to the casual investor. Over half are smaller firms that rank between 250th and 500th in sales.

Indeed, the popular impression that only big companies use business aircraft is wrong. Many of these operators are lean, entrepreneurial, growth-oriented companies.

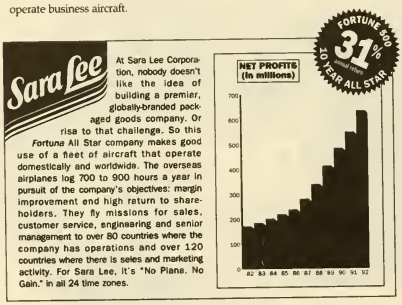
Based on 1992 1993 *Fortune* 500—Ranked By Performance to Investors 1982-1992.



***BusinessWeek*'s "Productivity Pacesetters": 80% operate aircraft**

Productivity is the business watchword of the 1990s. *BusinessWeek* ranks the Standard & Poor's 500 on the basis of superior sales growth per employee. It's a great measure of both business vitality and cost control.

Eighty percent of these productivity pacesetters own or operate business aircraft.



"Among the FORTUNE 500, those companies that produced the greatest return to investors over the ten-year period 1982–1992 were also aircraft operators. Aircraft operation among the best and worst performers is related to total return at the 99 percent level of confidence."

—Arthur Andersen
Business Statistics
Performance Study

Planes = Gains

Time

Business aircraft invent time. Days melt to hours. Hours melt to minutes. The main benefit isn't comfort, but productivity and efficiency. When management does more, shareholders benefit.

Flexibility

Business aviation expands the number of usable airports from the 500 served by scheduled airlines to more then 6,000 available to general aviation.

Productivity

Travel time becomes very productive. The private environment of a business airplane makes an efficient global office, especially since advanced satellite communications are available.

Security

A business aircraft is just about one of the best places on earth to hold confidential business meetings, and personal security is assured.

Customer relations

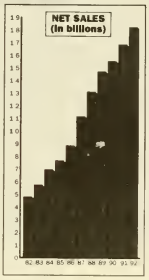
More contact gains more sales. Nothing is as effective or efficient as a business aircraft in keeping you face-to-face with your customers.

Safety

General aviation has achieved its best safety record in 50 years. The record for business aircraft flown by professional crews often betters that of the airlines, making it one of the world's safest transportation modes.

FORTUNE 500 26% Annual Return 10 YEAR ALL-STAR

Rubbermaid®



To the people of Rubbermaid, 365 isn't just the number of days in a year, it's the number of new products they launched in 1992. One for every day of the year. People who move this fast need transportation that can keep up. So the company operates two business jets. Like Rubbermaid's products, management looks to its aircraft for utility and productivity rather than "show biz." As a result, they are in constant use by a wide group of associates. It's not unusual to have a middle-level group from Sales, MIS, or R&D "bump" senior management from a flight. That's because the focus is on performance, particularly financial performance. Rubbermaid stockholders enjoyed a 10-year, 25.7 percent annual return and a 38-year stretch of consecutively higher dividends. For Rubbermaid, its "No Plane. No Gain." 365 days a year.

PRIVATE ALL STARS COMPANY

Marketing Research Institute

"MRI's aircraft double productivity. Our account executives see 8-10 clients a week instead of five."

Marketing Research Institute is a $2 million, 12-employee outfit that operates coast-to-coast. So they're quick to use and praise the company's single-engine, four-place airplane as a productivity machine: It's flying 120 days a year, logging more than 300 hours.

Horton Holding, Inc.

"Our directors used to say we couldn't afford an airplane. Now they say Horton Holding can't afford not to."

Horton Holding regularly needs to visit 65 U.S. sales offices and 800 distributors of its high-quality brakes, clutches and components. But it isn't a huge company. [illegible] 420 employees cover their territory like giants, [illegible] business aircraft. And that gets results: The company has grown four times in size since acquiring its first airplane.

"For Value Line Companies that purchased new turbine powered airplanes, earnings per share in the years following the purchase were, on average, greater than the Value Line average earnings per share for these years."

—**Arthur Andersen**
Business Aviation Performance Study

As it turns out, the company airplane gives both stockholders and management a lift.

This new information about the contribution of business aviation couldn't be better for stockholders. "No Plane." means "No Gain." in *sales, earnings, total return* and *productivity*.

And, it's good news for company managers. For too long CEOs, CFOs and Boards of Directors have tiptoed around the subject of the company plane.

On one hand, they are sensitive to critics who call it an expensive "perk." Some are defensive, others won't even discuss the subject.

On the other hand, they know the company plane is a powerful business tool that makes "impossible" trips possible and helps maintain better control of the business.

What's been missing from this debate is the kind of hard, convincing numbers that have resulted from work by Arthur Andersen, an independent source.

The company plane is a productivity tool and a boost to performance. Both management and stockholders share its benefits.

NO PLANE NO GAIN

Planes mean gains.

New evidence points to positive conclusions about the contributions of business aircraft. Companies that use or purchase airplanes have:

- **Sales gains**—
  averaging 7.4 percent greater growth than non-purchasers over a 4-year period.
- **Earnings per share gains**—
  averaging 30 percent greater than the Value Line Stock Index.
- **Productivity gains**—
  80 percent of *BusinessWeek*'s "Productivity Pacesetters" operate aircraft.
- **Shareholder gains**—
  92 percent of *Fortune* magazine's top performing companies operate aircraft.

The General Aviation Manufacturers Association (GAMA) and the National Business Aircraft Association (NBAA) represent the manufacturers and users of the best-built business productivity tools in the world.

General Aviation Manufacturers Association
1400 K Street, NW, Suite 801
Washington, DC 20005-2485
202-393-1500 Fax 202-842-4063

NATIONAL BUSINESS AIRCRAFT ASSOCIATION, INC.
1200 Eighteenth Street, NW
Washington, DC 20036-2506
202-783-9000 Fax 202-331-8364

AIRPORTS COUNCIL INTERNATIONAL

American Association of Airport Executives

Statement of

Airports Council International - North America
and
American Association of Airport Executives

on

Aviation Infrastructure Needs

Before the Subcommittee on Investigations & Oversight
House Public Works and Transportation Committee

April 28, 1994

Presented by

Jim Wilding
General Manager of the Metropolitan Washington Airports Authority

and

First Vice-Chairman
Airports Council International - North America (ACI-NA)

AIRPORTS COUNCIL INTERNATIONAL
1220 19th Street NW, Suite 200
Washington, D.C. 20036
(202) 293-8500
Fax: (202) 331-1362

AMERICAN ASSOCIATION OF AIRPORT EXECUTIVES
4212 King Street
Alexandria, VA 22302
(703) 824-0504
Fax: (703) 820-1395

STATEMENT OF THE AIRPORTS COUNCIL INTERNATIONAL-NORTH AMERICA AND THE AMERICAN ASSOCIATION OF AIRPORT EXECUTIVES ON AVIATION INFRASTRUCTURE NEEDS APRIL 28, 1994

Mr. Chairman and Members of the Subcommittee:

Good morning. I am Jim Wilding, General Manager of the Metropolitan Washington Airports Authority, and First Vice-Chairman of the Airports Council International - North America (ACI-NA). I am pleased to be here today to present the views of ACI-NA and the American Association of Airport Executives (AAAE).

The Airports Council International-North America (ACI-NA) represents the local, state and regional governing bodies that own and operate commercial service airports in the U.S., Canada and Bermuda. ACI-NA member airports serve more than 90 percent of the U.S. domestic scheduled air passenger and cargo traffic and virtually all U.S. scheduled international travel. The American Association of Airport Executives (AAAE) is a professional organization representing the men and women who manage airports in the United States.

We appreciate this opportunity to present the views of the airport operators and executives across the country regarding aviation infrastructure needs.

From the earliest days of aviation, local governments have had the primary responsibility for developing, operating and financing our country's commercial airports. Today, the air transportation system is the linchpin of our national and local economies, essential to the safe transportation of people and goods, both domestically and internationally.

Airports also support local economic development by providing complete transportation services, stimulating business activity and investment and creating jobs. Airports must generate revenue for their particular operations to be self-sufficient, usually without the general tax revenues enjoyed by other public enterprises. They must operate like cities within cities, providing their own police and fire protection and their own public works. Airports must perform all these services efficiently, unobtrusively and with as little impact on the environment as possible. This has become increasingly challenging in recent years.

INCREASED INVESTMENT IN AIRPORT INFRASTRUCTURE CAPACITY IS VITAL TO THE NATIONAL AND LOCAL ECONOMIES AND AIRLINES' HEALTH

Investing in our aviation infrastructure is critical to provide the facilities that airlines and the air transportation system need now and into the future. Airport and air traffic delays are still with us, despite the temporary downturn in the economy.

- Currently, 23 airports suffer 20,000 hours of delay or more per year, costing the airlines at least $32 million in delay costs at each airport, according to the FAA. If nothing is done to increase system capacity, the FAA forecasts that the number of seriously congested airports (those with 20,000 hours or more of annual delays) will increase to 33 in less than ten years -- a daunting increase.

- At the top 100 airports, passenger enplanements are forecast to increase from 452 million in 1991 to 861 million by the year 2005, a 90% increase over the 15-year period of the FAA's forecast, an average of 6 percent annual growth.

This growth in demand will place a tremendous strain on the existing airport and airspace system, and will require a renewed commitment to expand system capacity. Despite the temporary lull in air travel demand in the United States, growth will resume, and we are now beginning to see positive signs. Even if the growth is more modest than projected, greater effort to increase capacity is fully justifiable in light of the score of airports already burdened with serious delays and delay costs. We cannot afford the billions of dollars in annual delay costs to the airlines and air travelers that are caused by an inefficient and inadequate air transportation system.

We believe that the local and state government airport operators, with federal government support, have the responsibility to look long-term, to plan, finance and build not only the airport facilities needed today, but also those which will be needed in the near and long-term. It should not be surprising that airline management -- especially given the current operating environment -- look to the short-term, the next quarter, or in the case of some carriers in bankruptcy, week-to-week.

The inevitably lengthy development and implementation tasks to provide new airport and airspace capacity justify vigorous effort now to ameliorate the already very serious capacity shortfall and high delay costs at major airports. It generally takes 3-7 years to undertake and complete an airport development project. The extensive master planning process, environmental approvals, long-term financing and other actions that must be accomplished make it extremely difficult -- and certainly not cost-effective -- to disrupt or delay projects that are underway. We cannot afford to be shortsighted. That is what got us into the position we are in now with inadequate airport capacity and facilities. Since deregulation, we as a nation failed to provide adequate funding and means to expand capacity as necessary to keep pace with the rapid growth in aviation that was experienced in those years. We are still catching up even now, despite the slow growth. But one thing we should have learned by now is that the aviation business is cyclical, and we can fully expect that when the economy improves, air travel demand will take off again. We will have doomed our air transportation system to perpetual inadequacy, inefficiency and unprofitability if we do not continue to invest in our airport infrastructure to build and expand now for tomorrow.

Investment in airport development fosters not only a competitive, efficient and growing air transportation system. It also contributes to economic revitalization and growth throughout the country, creating jobs and wages, new business activity, better air service and opportunities for healthy competition. For each $1 billion invested in airport development, approximately 40,000 to 50,000 jobs are created and sustained, with related multiplier spending and tax revenue benefits for localities, states and the federal government. As an indicator of the economic engines airports have become, airports serving the 30 largest metropolitan areas generate annually more than $250 billion in economic activity, more than $80 billion in wages, and nearly 4 million direct and indirect jobs for their local economies and residents. ("The Economic Impact of Civil Aviation and the U.S. Economy," Wilbur Smith Associates, June 1990. Prepared for the Air Transport Association and the Partnership for Improved Air Travel.)

With the focus on federal deficit reduction and economic revitalization and growth, ways must be found to create jobs, ensure a sound general economic recovery, and foster a healthy and growing transportation system. Investment in our nation's airports, through federal and local user-funded capital development programs, will return enormous dividends to citizens, travelers, and shippers, as well as to airlines and other businesses that provide or depend upon aviation services.

AIRPORT CAPITAL DEVELOPMENT NEEDS OF $10 BILLION ANNUALLY CONTINUE TO GO UNMET

During the Airport Improvement Program (AIP) reauthorization hearings last year, we presented an updated estimate of airport capital development funding needs based on our nationwide survey of airports and FAA review and confirmation. It clearly demonstrates that airports require more than $10 billion each year over the next five years -- at least $50 billion for needed capital improvement and capacity expansion projects. These are not "field of dreams" projects or a "wish list." They represent projects that are essential to the continued development, improvement and expansion of our airport infrastructure. They are real projects identified and justified -- with real aviation and economic benefits. Many of these projects have been requested and/or approved by the airlines serving the respective airports. Many are on a long list of unfunded airport grant project pre-applications that have been pending at the FAA, which totals more than $8 billion. This list of backlogged projects represents projects that are eligible and deserving of federal assistance, but have not been funded given the limited AIP dollars currently available.

More than 60 percent -- $6 billion annually -- of the $10 billion total are projects eligible for AIP grants. Compared to the $10 billion in annual development funding needs, the primary airport funding sources -- $1.69 billion in AIP grants (FY'94), an annual average of $3.5 billion in airport bonds, and an estimated $800 million in PFC revenues (FY'94 estimated) -- fall far short of the level of funding that is actually

required. We are underfunding our airport infrastructure needs in this country by at least 40 percent, and the AIP program is providing less than one-third of the AIP-eligible project needs. It is important to remember that the AIP program is funded from dedicated passenger and shipper taxes collected by the federal government in the airport and airway trust fund; passengers and shippers deserve to have their aviation taxes fully spent and to receive the full benefits of the airport expansion and improvements for which they have paid.

A dramatically growing portion of airport funding needs and costs are driven by federally mandated programs and requirements, such as security systems, environmental mitigation, deicing and other safety requirements, the Americans with Disabilities Act, and others which are commanding more and more airport resources and attention. As part of our capital needs survey update last year, we provided a very conservative preliminary estimate that federal mandates account for more than $1 billion of airport funding needs each year. Other estimates indicate that environmental costs alone may exceed 10-15% of total airport capital development spending each year.

The 1992 AIP reauthorization law expanded AIP eligibility to better assist airports in meeting federal requirements and compliance with national objectives, particularly the Americans With Disabilities Act requirements, and the Clean Air and Clean Water Acts. However, increased eligibility alone will not provide one more dime for these growing costs if the actual appropriations levels are not also increased to keep pace. The Congress should also enact the Administration's proposal to expand eligibility for federally mandated costs in the PFC program, especially since all other AIP eligible projects are PFC-eligible.

Unless AIP funding levels are increased, any funding airports might receive to recover federally mandated costs will come at the expense of other important airport infrastructure and capacity projects. Airports are finding themselves caught in a squeeze: more and more federally mandated requirements and costs are being imposed, yet the AIP program funding is not growing to help cover those federally imposed costs adequately, let alone fund the nearly $6 billion in AIP-eligible capital development projects each year. The fact is that the current AIP appropriations level of $1.69 billion for FY 1994 is seriously inadequate to meet these tremendous and growing needs, even with the additional funding local passenger facility charges (PFCs) are beginning to provide. Every dollar that AIP is underfunded forces airports to find alternative funding for important projects, in most cases by increasing airline charges to support greater debt financing.

Another area where needs are growing, primarily to relieve congestion, is the landside and access roads at airports. Preliminary results from a survey now being conducted by ACI-NA indicate that landside congestion has become a major problem for most airports. 71% of the airports that have responded to the survey consider landside access and circulation roadway congestion to be the greatest problem area for passengers.

Although airfield congestion tends to be primarily of concern to the larger airports, our survey finds that concerns about landside congestion cut across airports of all sizes. It is also clear from the survey that airports have identified ways in which to addresses landside access problems, and will require substantial funding to meet these needs. We would be pleased to share with the Subcommittee the full results after the survey is completed.

AIRPORT IMPROVEMENT PROGRAM

The Airport Improvement Program (AIP), since its inception in 1982, has provided the nation's airports with over $13 billion in user-generated federal funds, supporting capital development projects in every state in the nation and creating hundreds of thousands of jobs. Vital projects to "grow" our aviation infrastructure system would not and will not be possible without a strong and stable AIP program. In this regard, we are hopeful that the Senate, like the House, will support and pass a multi-year reauthorization bill as soon as possible. At least a $2.1 billion authorization level is needed with annual increases, recognizing again that this is far short -- roughly one-third -- of AIP-eligible needs, and that expecting to achieve actual appropriations at this level is optimistic given the current budgetary and appropriations constraints. That's why it is so important that Congress recognize and understand the impact of underfunding airport development and the lost economic and aviation benefits it costs us.

One of the serious adverse effects of the current low funding level is that it dries up discretionary funding for priority capacity enhancement projects, including those funded through multi-year "letter-of-intent" (LOI) commitments. Absent a multi-year authorization, the LOI program is the only means by which the FAA and airports can provide sustained funding for major projects. If budgetary pressures continue to limit AIP appropriations levels, it will be important for Congress to ensure that adequate funds are available each year for priority capacity projects and LOI commitments.

Returning to the multi-year cycle for AIP will allow our airports to better plan for the future. The single year reauthorization cycle causes financing difficulties for long-term airport construction projects and prohibits the FAA from issuing multi-year grants. As we have noted, capital development projects have long lead times and financial uncertainty can cause project delays and cost escalation.

AIP Program Lapse and Consequences

We commend the House for passing H.R. 2739, which would provide a three-year authorization of the AIP program at more than $2.1 billion annually. We are hopeful the Senate will soon act on the multi-year reauthorization bill it has pending.

Without an authorization for the current fiscal year, airports have received no AIP grants since last October 1. This long lapse in program funding has been costly, and now threatens to severely disrupt airport development programs with the peak construction season now upon us. To give you some idea of the impact, a recent ACI-NA survey of U.S. airports revealed that many existing and new projects have been delayed as a result of the AIP funding lapse. Our survey sample included 86 airports which handle 60% of total U.S. air travelers (19 large hubs, 24 medium hubs, 17 small hubs and 26 non-hubs. These airports were counting on more than $672 million in AIP funds this year. Based on the loss of AIP funds during the six-month period of October 1, 1993 through March 31, 1994, about 30% of the sample airports indicated they have had to delay in excess of $100 million in existing or on-going projects, and about 50% have delayed the start of new projects totalling more than $200 million. About 43% indicated they would attempt to find alternative financing, primarily bonds, in order to proceed with more than $600 million in on-going and new projects. Of course, alternative financing will dramatically increase the cost of funding these projects for airports and airlines. In addition to the extra costs of construction delays and alternative financing, the AIP lapse is costing thousands of jobs and denying economic benefits for communities and better airport facilities for air travelers.

The AIP program works very well as long as sufficient funds are provided. The current entitlement and discretionary categories and formulas have been effective in allocating funds among the various types and categories of airports and projects across the country. FAA has in place a project priority ranking system to enable the agency to identify projects for discretionary funding that will have the most benefit on the local and national aviation system. Unfortunately, FAA is forced to turn away many important projects because of inadequate funds.

FAA's AIP Project Selection and Priority System

Last year, the Federal Aviation Administration set up a working group to examine the current criteria and prioritization system FAA uses to allocate AIP grants, the need for better "investment criteria" and to recommend improvements. The working group was chaired by George Howard, ACI-NA's President, and was comprised of experts from airports, airlines, general aviation, financial institutions, academia, and airport/aviation planning and financing consultants. After a thorough review of the Priority System Matrix for System Planning, the Working Group concluded in its report that the overall process of discretionary project selection employed by the FAA is fair and efficient in prioritizing projects. Quantitative measurements, such as "investment criteria" suggested by the House transportation appropriations subcommittee, are already being used to a great extent by the FAA in the airport planning and project review process, and are integral to FAA's project selection procedures. The Working Group also felt that FAA needs to have better means and methods to evaluate aircraft delay data for the purpose of estimating the system-wide benefits of one particular airport capacity project over

another. This is especially important since the FAA is proposing changes in its policy for AIP Letters-of-Intent that place greater emphasis on selecting airside projects that offer the greatest benefit to increasing system capacity and reducing aircraft operating delays and costs to airlines and air travelers. We concur with the Working Group's findings and recommendations.

PASSENGER FACILITY CHARGE PROGRAM

Three years ago, Congress enacted a landmark bill that authorized airports to raise capital development funds directly from air passengers by imposing modest passenger facility charges (PFC's) on travelers using the airport. This was done to help bridge the gap between annual airport capital development funding needs exceeding $10 billion -- and inadequate funding from the federal Airport Improvement Program (AIP).

The PFC program has begun to help bridge the gap, but the program has been in operation only a short time. The first ten airports which received FAA approval have not been collecting PFC revenues for two years yet. As of April 20, 1994, the FAA had approved 190 applications to impose PFCs at 177 locations. The total revenue that will be raised over the life of the various collection periods is approximately $9.2 billion. In 1993, airports collected $486 million in PFC revenues. FAA forecasts that in 1994 PFC revenues will be $750 - $800 million. By 1995, FAA forecasts that PFC revenues may reach $1 billion a year, assuming that 85% of large and medium hubs are participating. Presently 63% of large and medium hubs are imposing PFCs.

Of those 177 locations, 18 are large hubs with an average collection period of 9 years for a total of $6.5 billion. 6 of the top 10 airports currently have PFCs, and 3 of the 4 remaining have had a consultation or indicated interest. 23 locations are medium hubs with an average collection period of 7 years for a total of $1.5 billion. 40 locations are small hubs with an average collection period of 9 years for a total of $950 million. 94 locations are non-hub airports with an average collection period of 6 years for a total of $150 million. And there are 2 small commercial service airports with PFCs collecting a total of $194,000 for an average of 6 years. As of January 1994, excluding the new Denver airport, 37% of the PFC funds collected at airports were for landside projects including terminals, land acquisition and security. 16% of the funds are being used for roads, including people movers. 15% of the funds are for airside projects including runways, taxiways, aprons, planning, equipment and lighting. Noise projects account for 10% of the total.

AIP entitlement turnbacks from those large and medium hub airports imposing PFCs are expected to provide $105 million for the Small Airport Fund. In the first year, 1993, the "turnback" total was $57 million.

PFCs are critical to provide airports with the financing tools and greater independence to

respond to the air traffic and expansion needs of the airlines and the air service needs of the air travelers and communities they serve. PFCs are building worthwhile projects -- those that preserve or enhance safety, security and capacity, reduce noise impacts, or enhance competition among air carriers. Since a PFC is a local charge that can only be applied to local airport projects, the PFC program enables airports to respond to the demands and needs of their communities and the air travelers who rely on the airport. In addition to airside projects, such as runways and taxiways, PFCs are being used by airports to effectively address long-neglected and underfunded needs for noise mitigation for neighboring communities and residents, terminal improvements and expansions, ground access projects to relieve congestion for travelers getting into and out of the airport, and the expansion of gates to increase air service for their communities and expand competitive opportunities for the airlines.

Airports can now undertake projects that communities and air travelers need, which otherwise could not be funded because of limited Airport Improvement Program (AIP) funds or lack of support from the airlines because of their financial constraints or because they don't view the project to be in their interest. Airport operators and airlines will not always agree on the need for, scope or timing of a particular airport development project or program. Often, the individual tenant airlines at an airport will not agree among themselves about development priorities. This is understandable, since they are competitors and each has its individual corporate strategies and preferences. This is precisely why the AIP and PFC programs are so valuable. Airport operators are the public bodies entrusted with developing the infrastructure serving all elements of the air transportation system. AIP grants and PFC programs enable them to proceed with needed development without first obtaining approvals from competing and diverse airline companies.

PFC-funded projects are also creating jobs and stimulating business investment and opportunities for the airlines and many other airport-related businesses. With no AIP program this year, PFCs have been critically important to help many airports proceed with funding for projects. Without PFCs, many projects would go unfunded or would be delayed. The long-term capacity improvements and benefits they provide would not be available when the airlines and traveling public need them, and the jobs and economic benefits they provide would not be available now when the nation's economy needs them.

Thank you, Mr. Chairman, for holding this hearing and helping to focus attention on the nation's aviation and transportation infrastructure needs.

ADDITIONS TO THE RECORD

STATEMENT OF

Captain David J. Haase
Executive Central Air Safety Chairman
Air Line Pilots Association, International

Before the
Subcommittee on Investigations and Oversight
Committee on Public Works and Transportation
U.S. House of Representatives
April 28, 1994

Aviation Infrastructure Needs

The Air Line Pilots Association (ALPA), representing 42,000 pilots who fly for 36 U.S. air carriers, is pleased to offers its views on aviation infrastructure needs before this Subcommittee. ALPA strongly supports all appropriate actions to ensure that the U.S. system of airports and ATC facilities are the best in the world and we believe that all affected parties, including federal, state, and local governments should commit such resources as are necessary to meet that goal.

Relatedly, we urge Congress to enact, as quickly as possible, the reauthorization of the Airport Improvement Program. The summer construction season is upon us and certain approved airport projects are at risk of indefinite postponement unless AIP funds are allocated for their intended purpose.

Concerning the questions raised by the Subcommittee in its correspondence relative to this hearing, we would offer the following general comments. The first stated priority of AIP legislation is safety and we urge Congress to ensure that this priority is actually met as FAA implements funding for future proposed projects. Further, the AIP funding level should be predicated primarily on actual safety and airside needs taking into account other state and local funds and passenger facility charges at individual airports. As our following comments detail more fully, we are concerned about the disparity of safety at certain airports used by commercial air carriers that are not certificated and others which, though certificated, have inadequacies which are not being met.

Concerning funding of landside facilities, we believe that federal taxes collected for aviation improvements should be spent first on airside safety items; funding of such facilities as subway stops should be given last priority if they are funded by AIP at all.

ALPA is a supporter of the FAA's Capital Investment Plan which has, according to the agency, realized benefits to aircraft operators of $35 billion since 1981, saved 65 million aircraft flight hours, and saved more than 39 billion gallons of fuel due to reduced delays and improved efficiency. We urge Congress to keep an active interest in the CIP with a view towards encouraging the FAA's expeditious implementation and funding of the projects included therein.

Following are our comments on specific funding needs.

ONE LEVEL OF SAFETY

Last year we testified before Congress on the need for "one level of safety" as applies to airport improvements and certification. We are pleased that the National Transportation Safety Board has taken a strong interest in this issue and has scheduled hearings on the subject this summer. We are hopeful that national attention will be given to this concern, especially in light of the continuing accidents and incidents of regional carriers as was experienced this past winter.

It would no doubt surprise many of the traveling public to learn that some of the airports to which they travel on regional carriers are not certificated at all. FAA airport certification requirements currently apply only to airports served by scheduled air carriers operating equipment with more than 30 seats. This regulation's applicability provision is an anachronism from pre-deregulation days which very much needs to be amended so as to provide one level of safety at all commercial service airports.

Additionally, large commercial airports have for many years enjoyed an ability to receive quantities of FAA-purchased safety improvements, or federal funding for same, which smaller airports can only place on a "wish list." The addition of Passenger Facility Charges as another revenue source gives larger airports even greater ability to fund needed improvements.

Conversely, smaller airports do not match the capabilities of their larger counterparts in such areas as: aircraft rescue and fire fighting equipment; instrument landing systems; taxiway lighting; runway lighting; lighted signs; visual approach path indicators; approach lighting; and, other equipment needed for operations at visibilities of one-half mile and below. We believe it is time for the U.S. to institute one level of airport safety by addressing the need for greater safety-related FAA equipment purchases and AIP funding for smaller commercial service airports.

In order to address these deficiencies, ALPA recommends:

1. that FAA be tasked with amending FAR Part 139 by 1996 so as to require certification of all airports that serve scheduled air carriers;

2. determine the amount of money needed to achieve certification and the equipment requirements to institute one level of safety; and,

3. recommend a methodology to ensure that smaller airports receive needed safety equipment, whether through the FAA's facilities and equipment budget or by revising the AIP entitlement formula.

RUNWAY PROTECTION ZONES/FAR PART 77

In February 1990, we appeared before Congress and requested that action be taken on the issue of inadequate runway overrun and safety areas, which are part of Runway Protection Zones (RPZ's) as they are now known. At that time, we cited the USAir flight 5050 accident at LaGuardia, which destroyed a new B-737-400 and killed two passengers, as an unfortunate reminder of the severe inadequacies of many commercial airport runway overrun and safety areas. We requested that the FAA be tasked with completing a study on the scope of this problem and require by regulation that airports bring current RPZ's up to FAA minimum standards within 10 years of the reauthorization of AIP and provide AIP funding for that purpose.

In ALPA's view, the principal aim of an RPZ is to enhance the safety of commercial aviation with a complementary goal of protecting people and property on the ground. This is done by an airport sponsor's purchase of the land contained within the defined RPZ area and removing obstacles (such as jet-blast fences) which would preclude a safe deceleration of an aircraft in the event of an emergency.

This issue was brought to the attention of Congress last year and we were pleased that language was included in the report of the Public Works and Transportation Committee regarding the Aviation Infrastructure Investment Act of 1993 which recommended that the FAA determine the scope of the RPZ problem and costs of ameliorating same. This legislation has not yet been enacted, however, so no action has yet been taken by the agency on this matter. We again call for a regulatory deadline of 2004 by which time airports must bring all runways into compliance with minimum FAA standards for RPZ's.

Another issue related to that of providing clear RPZ's is provision of object-free airspace around airports. Thus, while the issue of a Notice of Proposed Rulemaking (NPRM) to FAR Part 77, Objects Affecting Navigable Airspace, is perhaps outside the scope of this hearing, we would like to take this opportunity to raise it as one deserving of congressional emphasis. FAR Part 77, which concerns management of obstacles in airspace near airports, is largely advisory in nature and has never, in our opinion, served the aviation industry effectively.

There have been three significant government/industry efforts to amend FAR Part 77, all without success: in 1978 the regulation was included as part of the FAA's regulatory review; in 1984, the National Airspace Review (NAR) recommended changes to the regulation; after pressure from the industry representatives serving on the NAR, an NPRM was released in August 1990 which came nowhere near meeting the needs expressed by industry. Since the release of the NPRM, no final ruling has been issued and we understand that a supplemental NPRM is being drafted.

ALPA respectfully solicits the support of this subcommittee to task FAA with producing a final ruling on Part 77 not later than December 1994 which mirrors the explicit recommendations produced by the 1984 NAR.

PRECISION APPROACH PATH INDICATORS

ALPA was successful in persuading Congress to agree to include language in the "Declaration of Policy" to the 1987 reauthorization of the Aviation Trust Fund calling for priority implementation

of improvements to navigational aids at commercial airports. As a result of that effort, Section 502 (a)(4) was revised to read, in part, "this title should be administered...with highest priority...for installing...electronic or visual vertical guidance on all runways..." However, since that policy was adopted, ALPA has not seen evidence of a change in the FAA's proposed funding or installation priorities of visual vertical guidance devices.

Precision Approach Path Indicators (PAPIs) are the new international and U.S. standard for visual approach path indicators at U.S. airports. PAPIs are very useful for commercial flight crews because they enable the crew to determine their correct descent path and make a safer, more stable approach and landing. This vertical guidance is especially needed when other sources of vertical guidance information are lacking or deceptive, such as at night or in periods of low visibility. In addition, the allow some measure of noise relief on runways not equipped with an electronic glide slope.

ALPA's position is that all air carrier runways should be equipped with a visual approach path indicator. Approximately 225 air carrier runway ends have neither electronic glide slopes nor vertical approach path indicators.

We are pleased that this issue has been addressed in the previously cited Committee report to the Aviation Infrastructure Act of 1993 and support its adoption so that progress can be made by the FAA as recommended by Congress.

UNIVERSAL ACCESS SYSTEM

ALPA applauds Congress' action last year to appropriate $2 million for the purpose of establishing what was then referred to as a Transient Crew Security System. Late last year, the FAA's Office of Civil Aviation Security convened a new working group to determine how this money should be spent. Since that initial meeting, several more have been held by the new Universal Access System Working Group, a subgroup of the Aviation Security Advisory Committee.

To date, the UAS Working Group has agreed on numerous specific requirements and features of the yet-to-be-installed UAS prototypes. This summer, it is tentatively planned that three airports will be selected and used as test sites for the UAS prototypes; three major U.S. air carriers have also expressed interest in adopting the trial system for their transient employees for a test of about one year's duration.

As we have testified previously, the UAS system is essentially an add-on to the airport's federally-funded computerized access control systems so we believe it entirely appropriate that it become AIP-eligible. In that regard, we are most grateful that coth the House and Senate have seen fit to make this an eligible item in their respective reauthorization bills. Assessments of actual costs and funding amounts will not be forthcoming for several more months, but we encourage active Congressional interest in this project as it develops and is tested.

We appreciate the opportunity to make these comments before this Subcommittee and your consideration of them during your deliberations about the nation's infrastructure needs.

Statement of

David Z. Plavin
Director of Aviation
The Port Authority of New York & New Jersey

To

Subcommittee on Investigations and Oversight
House Committee on Public Works and Transportation

on

Aviation Infrastructure Needs

April 28, 1994

Mr. Chairman and Members of the Subcommittee, as Director of Aviation for the Port Authority of New York and New Jersey, I appreciate the opportunity to present our views on a very specific aviation infrastructure issue that is absolutely essential to the continued enhancement of capacity at our airports and the national aviation system.

The Port Authority of New York and New Jersey is the operator of LaGuardia, Newark International, and John F. Kennedy International airports. Together, they comprise the nation's premier aviation complex for both passengers and cargo. Clearly, this complex is a vital economic engine in our region. Each year, these airports serve some 74 million passengers, over 2 million tons of cargo, and employ 72 thousand people.

However, there is an aspect of aviation infrastructure in our region that is very limiting and constrains the operational and economic capacity of that engine. There should be no question that a passenger's trip to or from the airport is as important to his perception of a quality journey as any other element of his journey. Our ability to continue to grow and effectively serve passengers and cargo is directly linked to our ability to get them to and from the airport swiftly, safely, and reliably. It has long been recognized that system capacity is just as much a reflection of the landside portion of the airport -- ticketing and baggage systems, terminals, terminal frontages, roads, etc. -- as runways and airspace: there needs to be a balance maintained among <u>all</u> the elements of the aviation system infrastructure.

Unfortunately, Mr. Chairman, the New York/New Jersey region is just plain out of real estate. We simply have no ability to materially increase the capacity of existing roadways which access our airports, nor is there capacity to build new roads. Further, the existing roadways are now at, or near, capacity much of the time. It's likely to get worse.

For some time the Port Authority, officials in the region, and others in the transportation community have recognized that there was likely to be only one practical way to improve landside access to our three airports -- segregated, fixed guideway transport. It has only been with the advent of the Passenger Facility Charge (PFC), and its specific recognition of ground access projects, that an economically feasible way of pursuing an airport ground access program has become possible.

The Port Authority of New York and New Jersey is currently in the concept design phase of its Airport Access Program which includes two elevated rail links. The first is a 22-mile connection from JFK International Airport through Queens to LaGuardia Airport and into Manhattan. The second is a one-mile connection between Newark International Airport and the Amtrak Northeast Corridor. The FAA has approved use of the Passenger Facility Charge for the feasibility, planning, and environmental studies for these projects.

Improving accessibility to the New York region's three airports in this fashion has been inaccurately characterized by some to be an inappropriate diversion of aviation infrastructure funds for the purpose of extending the New York and New Jersey public transit systems. This is most definitely not the case for these two projects, although they have been subjected to a remarkable campaign of misrepresentation and misinformation.

First, mass transit riders will not use the system. It will be a dedicated system, limited to airport goers: air passengers, meeters and greeters, airport employees. One must have an airport as one's origin or destination to ride the train.

Second, the train will, in fact, serve as an aviation infrastructure enhancement. It will effectively increase the capacity of the local and national air system. The single biggest constraint to the growth of our airports is congestion on the roadways leading to the airport and the air terminal highways themselves. By increasing the capacity of the land access system, passengers will be able to use these facilities swiftly and -- most importantly -- reliably. This will expand the effective market and promote more effective use of the rest of the aviation infrastructure. Ongoing studies by outside experts are confirming that our airport system will grow in response to the implementation of the Airport Access Program.

Third, the advent of the airport links would come at precisely the right moment to capture the thousands of airport employees and other travelers whose vehicular use will be dramatically restricted by the Clean Air Act. Approximately 90 percent of the New York and New Jersey airport employees drive to work in single occupancy cars and most pay nothing for parking, two privileges that may no longer be possible with the Clean Air Act disincentives. An added bonus will be that 30,000 cars will be taken off the Queens highway network daily, eliminating 4400 tons of carbon monoxide from the air each year.

Fourth, it is now clear that when the system is completed, it will generate strong ridership. Without such a conclusion, the Port Authority would have no interest in pursuing this type of solution to the problem of airport access. Independent professionals, working with the Airport Access Program have conducted an exhaustive study to ascertain who would ride the automated guideway transit (AGT) system proposed for New York. Ten thousand air travelers and 10,000 airport employees were surveyed. Twelve thousand responses were studied. Questions were asked about travel choices involving factors such as cost, travel time, and reliability. It is projected that in 2003, the year the AGT would be completed, 32,000 trips would be made daily to and from LaGuardia and JFK. This represents 19 percent of the total number of daily trips that would be made to and from the airports using all modes of travel.

The study shows clear evidence that the system would draw riders from a variety of places. A station at 59th Street in the heart of Manhattan would be the most heavily used, serving 13,500 riders daily. Jamaica Station in Queens, connecting with 40 bus lines, 632 daily Long Island Rail Road trains, and several different subway lines, is projected to be the second busiest station, averaging some 6,000 passengers daily. It is worth noting that the system is expected to draw from the segment of air passengers who currently respond to the unpredictability of New York air travel by simply avoiding the metropolitan airports whenever they can.

If airports are economic engines, the AGT will fuel those engines. The AGT will be fully automated. It will be punctual, frequent, and it will operate in all kinds of weather. The Airport Access Program is, in sum, as intertwined with the health of the aviation industry as airport runways and taxiways.

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COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

SUITE 2165 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4472

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PAUL SCHMELTZER, Chief of Staff
SAM ESPOSITO, Chief Counsel

May 2, 1994

TO: Members, Subcommittee on Investigations and Oversight

FROM: Subcommittee Staff

RE: Summary of Subject Matter for Investigations and Oversight Subcommittee hearing on Wastewater, Water Supply, Port Development, and Inland Waterway Infrastructure Needs, Wednesday, May 4, 1994, 9:30 a.m., Room 2167 Rayburn House Office Building

On May 4, 1994, the Subcommittee on Investigations and Oversight will hold the fourth in its series of hearings on our nation's infrastructure needs, focusing on environmental and water resources infrastructure. These needs include wastewater and water supply, port development, and inland waterway infrastructure needs. The hearing will focus on current and future maintenance and capital construction needs, current and anticipated funding levels, the economic impact of neglecting needed infrastructure improvements, and innovative methods to fund infrastructure maintenance and construction.

BACKGROUND

Throughout our nation's history waterways have provided municipal and industrial water supply; low-cost, energy-efficient transportation; and economic development opportunities. Our rivers, streams, and coastal waters have also provided the means to dispose of our waste. At one time our water resources seemed inexhaustible. As our waters became polluted, we learned the importance of not only developing, but also managing and protecting our important water resources.

As our nation grew in size, it was recognized that the economic strength of our nation depended on a reliable transportation system. The federal government has been involved in port and inland waterway infrastructure development for almost 200 years. In 1824 the Army Corps of Engineers was given federal responsibility for developing, improving, and maintaining the national waterways system.

Federal funding of water supply infrastructure has been more recent. Historically, water supply infrastructure, other than federal reclamation projects in the western United States, has been a state and local concern. When U.S. Army Corps of Engineers water resource projects were built, water supply needs could not be added as a project purpose. Since 1958, water supply has been permissible as an ancillary project purpose; however, state or local interests had to pay for the incremental cost. Pollution control and wastewater treatment have also historically been a state and local concern. The Federal Water Pollution Control Act of 1948 was the first time federal funds were authorized for the construction of wastewater treatment facilities.

Federal Infrastructure Spending

Federal infrastructure spending for wastewater, water supply, port, and inland waterway development peaked in 1980. The Congressional Budget Office estimates that, in constant 1990 dollars, capital outlays for wastewater, water supply, port, and inland waterway infrastructure fell from $8.1 billion in 1980 to $5.8 billion in 1992.[1] EPA expenditures for the construction of wastewater treatment facilities fell from $4.3 billion in 1980 to $2.1 billion in 1993. Expenditures by the Corps on port improvements, on the other hand, rose significantly, from $166.9 million in 1980 to $823.3 million in 1993. Corps spending for inland waterway capital improvements fell from $427 million in 1980 to $422 million in 1993. However, operations and maintenance, which can include capital expenditures for rehabilitation, rose from $220 million in 1980 to $397 million in 1993.

The Corps does not have a line item in its budget for water supply spending associated with the construction of multi-purpose reservoirs. Funds for drinking water state revolving loan funds were appropriated for the first time in the fiscal year 1994 EPA appropriations bill. The $599 million cannot be spent until a drinking water state revolving loan program is authorized.

WASTEWATER INFRASTRUCTURE NEEDS

For twenty-five years after passage of the Federal Water Pollution Control Act of 1948, the federal government provided relatively small amounts of funding for the construction of wastewater treatment facilities. With the passage of the landmark Water Pollution Control Act of 1972 (Clean Water Act), Congress authorized significant increases in federal funding for wastewater treatment. The Clean Water Act authorized a construction grants program that allocated federal funds to the states and territories to build wastewater treatment facilities. The Act required the U.S. Environmental

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[1]These figures include funds for Bureau of Reclamation water resources projects and Farmers Home Administration / Department of Housing and Urban Development water supply and waste disposal grants which are not discussed in this memo.

Protection Agency to conduct a biennial survey of the capital construction needs for wastewater treatment facilities eligible for federal funding and necessary to meet water quality and public health standards.

In the Water Quality Act of 1987, Congress replaced the construction grants program with a state revolving loan fund program. States and territories were allocated federal capitalization grants to start their own revolving loan programs. Communities that needed financial help to build wastewater facilities would be eligible to receive a state loan, as opposed to a federal grant. As the loans were repaid, funds would be available to issue new loans. Federal funding for state revolving loan capitalization grants was scheduled to end after fiscal year 1994. Clean Water Act Amendments introduced in this Congress by our Committee (H.R. 3948) and by the Senate Environment and Public Works Committee (S. 1114) would extend federal funding for state revolving loan funds through fiscal year 2000.

Needs

The 1992 EPA Needs Survey found $111.9 billion of documented needs outstanding for wastewater treatment (see attachment for state needs). This figure represents capital construction needs and does not include operation and maintenance costs which are not eligible for state revolving loan funds. EPA divides needs into seven categories eligible for federal funding.

TABLE 1

Summary of Documented 1992 Needs (Dollars in Billions)

Needs Category		Documented
I	Secondary Treatment	$ 31.3
II	Advanced Treatment	$ 15.5
IIIA	Infiltration/Inflow Correction	$ 2.8
IIIB	Replacement/Rehabilitation	$ 3.6
IVA	New Collector Sewers	$ 17.9
IVB	New Interceptor Sewers	$ 14.7
V	Combined Sewer Overflows	$ 22.4
VI	Storm Water	$ 1.8
	Categories I-VI	$110.0
Other Eligibilities		
	Nonpoint Source	$ 0.7
	Ground Water, Estuaries, Wetlands	$ 1.2
All Categories		$111.9

Source: EPA 1992 Needs Survey

Small Communities

The wastewater infrastructure needs of small communities are particularly difficult to meet because small towns and rural areas do not have the financial resources to fund infrastructure investments. Small communities find it difficult to borrow funds in the private market because they lack a large enough utility rate payer base to pay back loans. This also limits the use of wastewater state revolving loan funds. The 1992 Needs Survey found that small communities had 67 percent of the wastewater facilities that needed capital improvements. However, because these facilities are small, they only comprise 12 percent of the dollar needs ($13.4 billion). EPA characterizes small communities as those with wastewater facilities that serve less than 10,000 people and process no more than 1 million gallons of wastewater per day.

Current Spending

The Congressional Budget Office estimates that wastewater infrastructure spending by federal, state, and local governments amounted to $18.5 billion in 1990: $8.5 billion for capital construction and $10 billion for operations and maintenance. The $111.9 billion in needs documented in EPA's 1992 Needs Survey represents capital construction needs and does not include operation and maintenance needs. Included in the $8.5 billion are EPA outlays for state wastewater revolving loan funds. In FY 1993 these outlays for state wastewater revolving loan funds were $2.1 billion. The Fiscal year 1994 appropriation for wastewater state revolving loan funds was $1.2 billion.

The Impact of Failing to Meet Needs

The United States has over 3.5 million miles of rivers and streams, roughly 40 million acres of lakes, ponds, and reservoirs, 5300 miles of Great Lakes shoreline, and 37,000 square miles of estuaries. The Clean Water Act requires states to assign uses to these resources. Water quality must support the uses designated by the states. Uses include recreation, fishing and shellfish harvesting, drinking supply, and irrigation. While progress has been made in improving our nation's water quality, the 1992 Needs Survey reveals that much more needs to be done.

The states reported that 8 percent of our rivers, 43 percent of our lakes, and 13 percent of our estuaries were contaminated with toxic chemicals. Thirty-eight percent of the assessed rivers are polluted and fail to meet designated uses. Forty-four percent of the assessed lakes, ponds, and reservoirs fail to meet designated uses. Estuaries have fared slightly better: 32 percent of the assessed waters fail to meet designated uses. However, 97 percent of the assessed shoreline miles of the Great Lakes fail to meet their designated water quality uses. Without adequate funding for needed infrastructure improvements we will never be able to deliver on the Clean Water Act's commitment of fishable, swimmable waters.

Polluted water has an adverse impact on our health, the environment, and our economy. Forty-seven states issued over 1200 fish consumption advisories warning people not to eat contaminated fish. Forty-three states reported 930 fish kill incidents to EPA involving over 5 million fish, and 18 states had to restrict shellfishing after finding instances of contaminated shellfish. In 1992, 37 states reported 371 swimming area closings because of high levels of bacteria present in the water.

WATER SUPPLY

The Committee on Public Works and Transportation does not have jurisdiction over the federal regulation of drinking water. However, the Committee does have jurisdiction over federal public works and the Army Corps of Engineers Civil Works Program and its multi-purpose reservoirs that provide domestic and industrial water

supply to communities. The Corps first received authority to provide communities with domestic and industrial water supplies from its multi-purpose reservoirs in the 1944 Flood Control Act. The Water Supply Act of 1958 authorized the addition of water supply as a project purpose for any Corps reservoir project as long as it was found economically justified. There are now 101 Corps multi-purpose reservoirs that provide domestic and industrial water supplies. This represents an infrastructure investment of over $1.2 billion.

Needs

Until the passage of the Safe Drinking Water Act in 1974, the majority of federal, state, and local water supply capital expenditures were not for water quality needs but for water quantity needs: the acquisition, transport, and distribution of water. Since then, however, the need to satisfy Safe Drinking Water Act Standards has increasingly influenced capital expenditures for water supply. There is no survey of needs for water supply capital expenditures comparable to that compiled for wastewater needs. EPA estimates that $9 to $12 billion must be spent every year to maintain and improve drinking water systems to meet Safe Drinking Water Act requirements. A 1990 report produced for the Clean Water Council estimates that there will be a $17 billion shortfall in water supply capital expenditures by the year 2000. A 1993 report produced for the Association of Metropolitan Water Agencies estimates that new Safe Drinking Water Act regulations could require communities to spend $28.8 billion on capital improvements for water supply systems.

Current Spending

The American Water Works Association reported its member utilities spent $2.6 billion on capital improvements in 1986. The Association anticipated spending by member utilities on capital improvements would increase to $4 billion a year by 1990. Unlike the situation with wastewater treatment, there is no large scale federal grant or loan program to support the construction of drinking water plants. President Clinton proposed a federal funding program, and Committee Chair Norman Mineta introduced H.R. 1865, a bill amending the Clean Water Act to authorize EPA to issue federal grants to capitalize state drinking water revolving loan funds. The loans would be used for the construction, rehabilitation, and improvement of water supply systems. The bill authorized $599 million for fiscal year 1994 and $1 billion for fiscal years 1995 and 1996. On May 27, 1993, the Committee on Public Works and Transportation reported the bill from Committee, but no further action has taken place on the bill.

The House Committee on Energy and Commerce, which has jurisdiction over federal regulation of drinking water, has also reported a bill authorizing a state drinking water revolving loan program. The bill authorizes $599 million for fiscal year 1994 and $1 billion for fiscal years 1995, 1996, and 1997. H.R. 1701 was reported by the Commerce Committee on May 27, 1993, but no further action has taken place on the

bill. Congress appropriated $599 million for state drinking water revolving loan funds in fiscal year 1994. However, the money cannot be expended until a drinking water loan program is authorized. The President's fiscal year 1995 budget asked for $700 million to fund drinking water state revolving loan funds.

The Impact of Failing to Meet Needs

There are over 200,000 public water supply systems in the United States. The Safe Drinking Water Act requires EPA to establish maximum levels for biological and chemical drinking water contaminants that pose a threat to public health. The Centers for Disease Control (CDC) estimates that waterborne biological contaminants cause nearly 1 million cases of intestinal illnesses and 900 deaths annually in the United States. In 1992, 17 states had reported 34 major waterborne disease outbreaks affecting 17,000 people. These figures do not take into account the 20 million people who are not served by public water systems.

In 1993, 400,000 people fell ill and 104 died in Milwaukee, Wisconsin, as a result of drinking water contaminated with the microscopic parasite crytosporidium. The CDC has found that the typical practice of disinfecting drinking water with chlorine may not be effective against cryptosporidium. Water systems may need to install monitoring systems for crytosporidium and other microscopic parasites -- a practice not now required under EPA drinking water regulations.

Many public water suppliers have lacked the funds to comply with federal drinking water standards. In a report issued by the Natural Resources Defense Council, more than 250,000 violations of the Safe Drinking Water Act were confirmed for the combined years of 1991 and 1992. These violations involved 43 percent of the nation's drinking water systems supplying an estimated 120 million people.

PORT DEVELOPMENT

Navigable waterways remain an important segment of our national transportation system. The Army Corps of Engineers has historically assisted in the development, safety, and efficiency of waterborne commerce. The federal role in port development has traditionally focused on navigation improvements. The Corps provides construction dredging to deepen and widen navigation channels, anchorages, turning basins, and harbor areas to allow for passage of larger vessels. The Corps also provides maintenance dredging to maintain the depths and widths of navigation channels, anchorages, turning basins and harbor areas.

The Corps also provides navigation improvements through the construction and maintenance of jetties and breakwaters. As with all Corps projects, federal navigation

improvements must pass an economic benefits test. The project improvements must generate future economic benefits greater than the cost of the improvements.

Needs

The U.S. Maritime Administration issues a biennial report on the status of public ports. While the report contains data on projected capital expenditures, there is no estimate of needs.

Current Spending

State and local governments and private industry have focused on land-side development such as wharves, loading facilities and equipment, and warehouse facilities. In 1992, capital expenditures totaled $671 million. Construction of new facilities accounted for 63 percent of these expenditures, with the remaining 37 percent being spent on modernization and rehabilitation of existing facilities. From 1946 to 1992 the U.S. public port industry invested $12.5 billion, primarily on land-side capital improvements but also on non-federal dredging. The American Association of Port Authorities estimates that capital expenditures for the years 1993 through 1997 will reach $5.5 billion. Non-federal dredging will account for 9.3 percent of these expenditures.

TABLE 2

Projected Capital Expenditures for Top Ten U.S. Ports (1993-97)
(Dollars in Thousands)

Rank	Port	Expenditures
1	Port of Long Beach	$1,099,900
2	Port of Los Angeles	$703,489
3	Port of Seattle	$577,264
4	Port of Oakland	$302,264
5	Port of New York/New Jersey	$294,232
6	Port of Miami	$279,730
7	Port of New Orleans	$238,974
8	Port of Houston	$217,663
9	Georgia Ports Authority	$193,100
10	Port of Tacoma	$170,028
	Total Top Ten Ports	$4,077,369
	Total All Ports	$5,525,360

Source: 1994 U.S. Port Development Expenditure Report

Navigation improvements have traditionally been paid for with federal funds, although lands, easements, rights-of-way, and dredged material disposal areas have been provided by state and local interests. The 1986 Water Resources Development Act required state and local sponsors, for the first time, to share the cost of federal navigation improvements. Constructing channels with depths of 20 feet or less requires a 10 percent cost share by non-federal interests; 20 to 45 feet requires a 25 percent cost share; and depths of more than 45 feet require a 50 percent cost share.

The 1986 Water Resources Development Act also established the Harbor Maintenance Trust Fund. Waterborne commerce was taxed at .04 percent of the value of commercial cargo, and the receipts were placed in the Trust Fund. The Corps of Engineers was authorized to pay up to 40 percent of the cost of maintenance dredging from the Trust Fund receipts. Prior to the tax, general revenues funded dredging costs. In 1990, the tax was raised to .125 percent, and 100 percent of the Corps maintenance dredging costs could be paid from the Trust Fund. The Trust Fund provided $523 billion for maintenance dredging in fiscal year 1993.

The Impact of Failing to Meet Needs

Commerce at our nation's ports contributes hundreds of billions of dollars to our economy. Port duties contribute 70 percent of all customs revenues, totaling $12.6 billion in 1991. In 1990 total waterborne commerce of the United States reached 1.9 billion metric tons. More than 1 billion tons was shipped through coastal seaports. Domestic commerce accounted for over 1 billion metric tons of cargo, and foreign commerce accounted for 850 million metric tons. Foreign commerce was valued in excess of $465 billion.

Failure to maintain and improve our ports can increase the transportation costs of shippers. Inadequate channel and harbor depths can prevent fully loaded vessels from using our ports. Operating partially loaded vessels raises the cost of transporting cargo. Higher transportation costs result in higher consumer costs. Higher consumer costs can make our products less competitive in world markets. Spending on channel and harbor improvements can now be determined by the funds available in the Harbor Maintenance Trust Fund. Ideally, port infrastructure investment decisions should be based on economic competitiveness needs, not on the balance of the Harbor Maintenance Trust Fund.

INLAND WATERWAYS

The United States has approximately 28,000 miles of navigable waterways with almost 25,000 of those miles improved for navigation. The 1978 Inland Waterways Revenue Act designated an 11,000 mile shallow draft (depths of 14 feet or less) inland

and intracoastal waterway system and imposed a fuel tax on commercial vessels using the system. The inland waterway system currently has 211 lock chambers operating at 168 lock sites. The inland waterway system includes our nation's major rivers: the Mississippi river system, including the Ohio, Illinois, Arkansas, Tennessee, and Missouri rivers and, in the Pacific Northwest, the Columbia/Snake river segments. The inland waterway system also includes the Gulf and Atlantic intracoastal segments (see attachment).

Virtually all of the inland waterways system has been improved for navigation. The improvements include channel straightening, weirs or other constructed works to prevent shoaling, and dams to control river elevations. Locks are required at inland dams and some intracoastal connectors. The locks and dams represent the largest share of the federal investment in the inland waterway system. This federal investment totals $11 billion with a replacement value that exceeds $40 billion.

Historically, new lock and dam construction or replacement was funded by the federal government from general revenues. The inland waterway system was treated as a national transportation and economic development resource that benefitted all regions of the country. As the cost of lock and dam construction and replacement increased, federal funding became difficult to obtain. No significant lock and dam project was authorized for construction or replacement from 1970 to 1986.

Needs

While there has been no formal estimate available of inland waterways infrastructure needs since 1983, 85 of the 211 lock chambers operating on the inland waterway system are over 50 years old. One lock on the Kentucky river is over 150 years old. Locks on the inland waterway system are generally of 3 lengths; 1000 to 1200 feet (25), 600 to 699 feet (114), and less than 600 feet (72). Many of the older locks are in the smaller size categories and need to be replaced by 1000 to 1200 foot chambers.

Smaller locks can either limit the size of the tow, which raises the cost of barge transportation, or, if a barge operator does not reduce the size of the tow, small locks can require a barge operator to divide the tow into many small groups of barges. This increases the time it takes to move the tow through the lock. For a waterway operator, the time a tow spends on the river affects the shipping cost. Delay costs range between $300 and $400 per hour based on a 15-barge tow.

The Corps projects that the Inland Waterways Trust Fund will not be able to fund all of the economically justified projects on the inland waterway system. These projects include the 11 projects now authorized for construction and 8 other projects that have completed Corps review. The Corps of Engineers and the Inland Waterways Users Board, created by the 1986 Water Resources Development Act, estimate the current rate of spending from the Trust Fund will limit major construction or replacement projects to

between 4 and 6 projects per decade. The 1986 Act authorized construction of 8 lock and dam projects to be partially funded from the Trust Fund. Subsequent legislation authorized 3 more projects. The estimated cost of these 11 projects is $4.3 billion.

Current Spending

The 1986 Water Resources Development bill changed the funding mechanism for lock and dam projects on the inland waterway system. An Inland Waterways Trust Fund was authorized to collect the fuel tax imposed by the 1978 Inland Waterways Revenue Act. The fuel tax would be gradually raised from 10 cents per gallon to 20 cents by January 1, 1995. The Corps spent $116 million from the Trust Fund for inland waterway construction in fiscal year 1993. Fiscal year 1994 Trust Fund appropriations are $128 million. The Trust Fund provides 50 percent of the cost of lock and dam construction and replacement. In addition, the 1992 Water Resources Development Act authorized the Trust Fund to pay 50 percent of lock and dam major rehabilitation.

Annual infrastructure spending by inland waterway operators and ports is not known. The U.S. Maritime Administration has identified over 175 inland ports with over 1500 vessel terminals. The Corps of Engineers estimates there are over 40,000 tugs, towboats, and barges in service on the inland waterways. Based on the economic life of vessels, facilities, and equipment, the Corps estimates that annual capital expenditures for ports would amount to $300 million, and vessels $550 million.

The Impact of Failing to Meet Needs

Inland waterway commerce is vital to the shipment of bulk commodities, especially agricultural commodities and coal. Seventy-nine million tons of farm products were shipped in 1990. More than half of our nation's export grain goes to deepwater ports by barge. In 1990, 184 million tons of coal were shipped on inland waterways, representing the annual output of nearly 21,000 coal miners. Water transport is the most fuel-efficient and cost-efficient method of moving products. Capacity limitations and delays on the inland waterway system increase the cost of transporting products. Increases in transportation costs often raise the cost of the products being shipped. This has an adverse impact on our nation's ability to sell our products abroad.

In 1990, 10 locks on the inland waterway system averaged over 3 hours of delays for barge tows. Corps data show that delay time increases as lock utilization increases. There are 6 locks that have a utilization rate of 80 to 100 percent. Thirty-one locks have a utilization rate of 60 to 80 percent. With inland waterway system use expected to climb, serious delays will result if needed capital improvements are not made to locks and dams on the system.

FEDERAL FUNDING OF INFRASTRUCTURE
(in millions of dollars)

	FY 93		FY 94		FY 95	
	Authorized	Appropriated	Authorized	Appropriated	Authorized	President's Budget
Wastewater State Revolving Loans	1200	1900	600	1200	---	1600
Drinking Water State Revolving Loans	None	None	---	599*	---	700*
Port Improvement	---	523.1**	---	585**	---	462**
Inland Waterways Lock and Dam Construction/Replacement	---	397***	---	128****	---	78****

--- No specific amount was authorized
* Subject to Authorization
** Harbor Maintenance Trust Fund
*** Inland Waterway Trust Fund and General Construction Funds
**** Inland Waterway Trust Fund

HEARING AGENDA

The following witnesses will present testimony at the Subcommittee's May 4th hearing on Wastewater, Water Supply, Port Development, and Inland Waterway Infrastructure needs.

* Mr. Robert Perciasepe
  Assistant Administrator for Water
  U.S. Environmental Protection Agency

* Dr. John Zirschky
  Acting Assistant Secretary of the Army
  (Civil Works)

* Mr. Ronald Norris
  Director of Transportation Policy
  Mid-America Regional Council
  Past President
  American Public Works Association

* Mr. Edward O. Wagner
  Deputy Commissioner
  New York City Department of Environmental Protection
  Representing the American Association of Metropolitan
  Sewage Agencies

* Mr. Carmen F. Guarino
  Chairman
  WRC Inc/Guarino Engineers
  Past Commissioner Philadelphia Water Department

* Ms. Roberta Savage
  Executive Director
  Association of State and Interstate Water
  Pollution Control Administrators

* Mr. A.E. Bregger
  President
  A.E. Bregger Construction Company
  Representing the National Utility Contractors Association

* Mr. Scott McElwee
  McElwee Scarborough Construction Company
  Associated Builders and Contractors

- Mr. Erik Stromberg
  Executive Director
  American Association of Port Authorities

- Mr. Berdon Lawrence
  Chairman, Inland Waterways Users Board
  President
  Hollywood Marine Inc.

- Mr. R. Barry Palmer
  Executive Director
  DINAMO
  The Association for the Development of Inland
  Navigation in America's Ohio Valley

- Mr. Frederic Schrodt
  Chairman, MARC 2000
  Midwest Area River Coalition

  Accompanied by
  Mr. Chris Brescia
  President
  MARC 2000

Attachment 1

1992 Needs Survey[1]
Total Documented Needs for Publicly Owned Wastewater Treatment Facilities and Other SRF Eligibilities
(January 1992 Dollars in Millions)

Table A-1 summarizes the 1992 EPA assessment of total documented needs by State for traditional and other SRF eligibilities to satisfy the design year (2012) population. All values are presented in millions of January 1992 dollars.

State	Category of Need									Other SRF Expanded Elgib.[2]	Total
	I	II	IIIA	IIIB	IVA	IVB	V	VI	NPS		
Alabama	142	153	61	25	233	133	0	0	0	0	848
Alaska	70	0	5	0	21	105	0	0	0	0	202
Arizona	701	89	2	1	182	301	0	0	0	0	1256
Arkansas	113	22	27	3	33	89	0	0	0	0	226
California	5388	144	139	706	684	794	856	6	0	0	8396
Colorado	129	197	0*	1	26	29	0*	0	172	0	849
Connecticut	339	660	52	23	345	305	899	0	0	0	2184
Delaware	97	2	0	5	79	40	2	5	0	0	188
Dist. of Columbia	0	122	0	0	0	0	80	0	20	0	222
Florida	1331	778	30	33	3022	851	4	885	0	0	6934
Georgia	180	880	44	35	78	477	229	0	0	0	1844
Hawaii	132	4	0	0	69	66	0	0	0	0	271
Idaho	69	52	0*	2	71	39	0	0	0	0	253
Illinois	567	305	52	354	178	344	1399	0	0	0	3148
Indiana	183	148	52	27	348	124	896	0	0	0	1779
Iowa	34	16	0	0	1	25	5	0	0	0	81
Kansas	84	84	36	50	50	316	16	0	0	0	618
Kentucky	203	35	79	18	586	348	31	0	0	0	1301
Louisiana	427	49	50	35	407	251	0	0	0	0	1229
Maine	148	0*	22	10	80	50	50	0	0	0	360
Maryland	241	731	23	70	344	168	30	0	0	0	1507
Massachusetts	3274	25	80	30	749	575	2721	0	0	0	7734
Michigan	814	6	170	27	851	520	1905	0	0	0	3894
Minnesota	572	130	16	34	44	80	124	0	0	0	972
Mississippi	211	71	74	59	112	131	0	0	0	0	658
Missouri	214	2	102	76	72	124	771	0	4	0	1365
Montana	20	0	0	1	30	14	0	0	0	0	65
Nebraska	97	1	1	31	2	39	61	12	0*	2	248
Nevada	78	39	2	3	23	20	0	0	0*	0	185
New Hampshire	105	10	10	5	282	206	236	0	0	0	856
New Jersey	1958	259	227	328	402	275	1290	7	3	0*	4759
New Mexico	43	0*	1	17	33	29	0	0	0	0	123
New York	5023	5670	178	543	2308	1806	7046	548	11	0	23136
North Carolina	317	1525	111	47	1072	810	1	20	22	20	4045
North Dakota	15	0	0	23	0	0*	0	0	0	0	38
Ohio	1249	248	380	348	629	370	1632	113	145	0	5093
Oklahoma	176	106	14	13	32	122	0	0	0	0	463
Oregon	429	389	13	140	292	110	106	0*	0	0	1460
Pennsylvania	998	130	12	18	958	163	1167	0	0	0	3056
Rhode Island	143	57	2	5	256	142	327	0	0	0	938
South Carolina	345	109	17	4	132	171	0	0	0	0	878
South Dakota	37	0	1	29	13	23	1	5	0	0	109
Tennessee	223	332	146	47	314	420	281	42	31	11	1847
Texas	1804	634	185	89	472	1459	0	0	0	0	4653
Utah	114	0	0	0	85	31	0	0	0	0	230
Vermont	81	16	1	1	17	7	57	0	0	0	183
Virginia	460	1073	126	187	468	513	436	144	0	0	3407
Washington	968	25	141	86	612	664	610	0	19	5	3025
West Virginia	358	41	30	30	451	275	21	0	0	0	1206
Wisconsin	453	127	85	2	251	167	5	0	0	0	1050
Wyoming	5	0	1	1	12	1	0	0	269	1109	1398
American Samoa	4	0	0	0	29	3	0	0	0	0	36
Guam	33	0	0*	0	9	4	0	0	0	0	46
Northern Marianas	22	0	0	0*	5	16	0	0	0	0	43
Palau	15	0	0	0	0	1	0	0	0	0	16
Puerto Rico	845	5	40	16	477	441	23	0	0	0	1847
Virgin Islands	53	1	1	16	0	0	0	0	0	0	71
Total	31312	15454	2774	3643	17943	14728	22431	1783	993	1147	111208

[1] Micronesia and Marshall Islands not considered in 1992 Needs Survey due to free association.
[2] Includes documented needs to address ground-water, estuarine, and wetlands protection.

Attachment 2

INLAND WATERWAYS SEGMENTS

PORTS, INLAND WATERWAYS, WASTEWATER TREATMENT AND WATER SUPPLY INFRASTRUCTURE

WEDNESDAY, MAY 4, 1994

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, DC.

The subcommittee met, pursuant to call, at 9:40 a.m., in room 2167, Rayburn House Office Building, Hon. Robert A. Borski (chairman of the subcommittee) presiding.

Mr. BORSKI. The subcommittee will come to order.

The subcommittee today is examining the condition and funding needs of our Nation's environmental infrastructure and our ports and inland waterways.

This hearing is the fourth in a series of the condition of our Nation's infrastructure and the impact of the failure to provide necessary levels of investment. Each of these different areas plays an essential role in our Nation's economy and in our Nation's quality of life.

The key question is whether we are making the investments that are necessary to maintain our ability to compete in a global economy, to increase economic productivity, and to improve our environmental quality.

Whether it is port development, water supply or sewage treatment, the estimated investment needs far exceed the funding levels that we are providing. For too many years, we have made shortsighted decisions to defer investment that have produced greater costs in the future.

Funding levels for wastewater treatment have dropped drastically since 1980. We have virtually no chance of meeting the $122 billion in needs that EPA has documented without some major changes in the way this program is funded.

In water supply, there are far too many serious drinking water problems each year in this Nation to allow this area to go unattended. Our water supply system must be guarded carefully, because very simply, there is no alternative.

More than 1 billion tons of cargo move through our coastal ports each year. The ability of the ports to move freight using the latest technology is a critical factor in our Nation's economic competitiveness. Many ports need help on the landside and on the waterside.

Inland waterways are the corridors for the movement of bulk cargo through the Nation's interior. The failure to maintain the inland waterway system will cause serious economic problems.

I am particularly concerned that all of these vital water-related infrastructure needs suffer when funding decisions are made because they lack glamour. These issues may be important, but they don't have star quality.

Ports, inland waterways, wastewater treatment plans and water supply systems are the underpinnings of our Nation. They must not be neglected in the annual budget battles that focus on each year's spending and frequently overlook long-term economic growth.

I would now like to yield to the distinguished gentleman from Maryland, Mr. Gilchrest.

Mr. GILCHREST. Thank you, Mr. Chairman. I am sitting in here for a while for the Ranking Member, Jim Inhofe. He will have a statement submitted to the record when he comes.

I have no official comment, except to say I agree with the Chairman that there are increasing serious problems with our sewage treatment plant infrastructure, with new sewage treatment plants that need to be built, with communities that can't afford even to pay back a no-interest loan in the State revolving loan system.

We are, I think, on the cutting edge of developing programs that will meet the needs that are actually out there. And what I want to do is just very briefly read a paragraph out of the—we as Members of Congress get little briefing materials once in awhile which we don't always read for a number of reasons, but I want to read just one paragraph to sort of focus our attention on the reality of the problem.

I often talk to constituents in my district, whether they be farmers or developers or realtors or people on planning and zoning commissions, about why we have to pass such tough regulations, what about property rights, and I always ask the question: Do you ever take a few seconds to look at what these regulations are designed to do? Do you ever think about the water that comes out of your faucet? Do you ever think what happens when you flush the toilet? Where does it go?

The Chairman mentioned these are not real glamorous issues, but these are issues with massive increases in population growth that seriously need to be considered if we are going to do anything positive for future generations, and I often ask developers and farmers, take a few seconds to have some sense of an understanding why there is regulations on nontidal wetlands. Does it act as a filter to purify water? Does it slow down runoff which clouds estuaries and rivers and streams which more or less at the beginning of the ecosystem stop it from flourishing?

So we are here to talk about the infrastructure needs, the requirements, the dollars, so that we can do something positive to prevent a huge train wreck, if I could borrow that phrase, sometime in the near future.

But just one quick paragraph, and then I will get off the soap box, which we really shouldn't use soap when you are camping because it gets into the streams and fish don't like it, so shower where they say shower and don't use the soap in the lake.

The States reported that 8 percent of our rivers, 43 percent of our lakes and 13 percent of our estuaries are contaminated with toxic chemicals; 38 percent of the assessed rivers are polluted and fail to meet designated uses; 44 percent of the assessed lakes, ponds and reservoirs fail to meet designated uses. Estuaries have fared slightly better.

I live near the largest estuary and they have probably—this says it fares slightly better, but I can tell you the Chesapeake Bay has a long way to go before it is restored to its full health and vibrancy. Thirty-two percent of the assessed waters fail to meet designated uses. However, 97 percent of the assessed shoreline miles of the Great Lakes fail to meet their designated water quality uses. Without adequate funding for needed infrastructure improvements, we will never be able to deliver on the commitment that we are trying to do here this year in a very controversial way, and I don't think it should be controversial, the Clean Water Act commitment of fishable, swimmable waters.

So with that, Mr. Chairman, I thank you for the time.

Mr. BORSKI. The Chair thanks the gentleman. The gentleman from Michigan, Mr. Barcia.

Mr. BARCIA. Thank you very much, Mr. Chairman.

I would just like to make some brief comments regarding my concerns about the State revolving fund program under the Clean Water Act.

Has any sort of study been conducted into the new allocation formulas and how they will impact the various States such as Michigan? Do you feel that the current formula appropriately addresses the most correct balance between need, population, and most serious health concerns?

I am concerned that my State of Michigan suffers greatly in proportion to the current formula. While I recognize the demographics have changed, I am also concerned that the magnitude of the serious health considerations in my State, such as combined sewage overflows, are not fairly addressed under the proposed system.

I would just like to make the comment that we know that the formula is a bit more optimistic than what we are likely to see in actual appropriations to the various States. I don't believe in the past that Congress has ever fully funded the formula as it distributes funds to the 50 States. So Michigan, the Great Lake State, I think, could be impacted in a negative way by the current allocation formula and we will just ask for a response.

Thank you, Mr. Chairman.

Mr. BORSKI. The Chair thanks the gentleman. The gentleman from Tennessee, Mr. Duncan.

Mr. DUNCAN. No comment, Mr. Chairman.

Mr. BORSKI. The gentleman from California, Mr. Filner.

Mr. FILNER. Thank you, Mr. Chairman for this series of hearings on the country's infrastructure. I think these discussions are extremely important for our Nation.

Although I hadn't planned it, the appropriate backdrop for the hearing is occurring in San Diego at this moment. Another break in the Tijuana sewage lines has sent another 50 million gallons of raw sewage flowing through the southern half of San Diego County

and through my district. We are trying to make sure we have the infrastructure to deal with that.

I know Mr. Perciasepe has been working very hard on that, and I appreciate those efforts. But unfortunately, the raw sewage flowing through my district again shows the need for these hearings and the immediate need for a lot more action in our infrastructure.

Mr. BORSKI. The Chair thanks the gentleman. The gentleman from Michigan.

Mr. BARCIA. Yes. Thank you, Mr. Chairman.

I, unfortunately, have a commitment with the full Science, Space, and Technology Committee which is meeting, so while that was an unusual opening statement, I did want to get my concerns expressed and those questions asked. So I appreciate your indulgence.

I also want to commend you for holding this hearing today. Thank you.

Mr. BORSKI. The Chair thanks the gentleman. The gentleman from New Jersey, Mr. Menendez.

Mr. MENENDEZ. Yes, Mr. Chairman. Thank you.

First of all, I have some testimony that I would ask be submitted for the record in whole.

Mr. BORSKI. Without objection, so ordered.

Mr. MENENDEZ. Very briefly, I want to thank you, Mr. Chairman, for allowing me to participate as a member of the full committee on the subcommittee hearing today and thank you for conducting oversight hearings on important issues related among all of the topics you are discussing today, port development and infrastructure.

For the past 16 months or so, I have worked on dredging issues, and as you suggest, some of these issues are not glamorous, and dredging falls within that category. It takes a huge amount of effort to receive a permit, but when it is all over, you don't see anything for your benefits when the dredging gets done, except that you are able to get cargo in and out of our ports.

The purpose really of the dredging issue is to keep the ports open and operating safely. I have seen firsthand for the last 16 months how administrative gridlock is quickly marring our Nation's port system. In my district alone, there are 180,000 jobs and nearly $20 billion of economic activity that are threatened in the Port of New York and New Jersey area, and particularly in my district in the Port of Newark and Elizabeth.

We have had 28 long-standing permits that have been ordered to either redo testing or restart the permit process, and one application was pending since 1986.

My region is not alone in this, Mr. Chairman. The Ports of Oakland, San Francisco, and Boston have experienced similar problems, and since 97 percent of the foreign commerce of the United States moves through our port, I don't think this is a problem we can let fester.

We had a meeting with one of our witnesses today, Mr. Perciasepe of the EPA and General Genega of the Corps in my office earlier in March. It was, I thought, a very positive meeting. It lead to an April 8th release of an action plan committing the agencies to an expedited dredging planning review.

However, we are still concerned. There are still issues to be addressed. Recently there was nearly a very serious accident in New York Harbor. A barge carrying petroleum products was struck, which cannot safely navigate to the terminals because of shallow depths from the lack of dredging. So I look forward to being able to pursue those issues with the Chairman, and I look forward to the opportunity.

[Mr. Menendez's prepared statement follows:]

STATEMENT OF THE HON. ROBERT MENENDEZ
BEFORE
THE SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
OF
THE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

I want to thank the committee for conducting oversight hearings on the important issues related to port infrastructure. For the past eighteen months, I have worked on dredging issues. Dredging is not a glamorous issue. While it takes a huge amount of effort to receive a permit, when the dredging is done, there is nothing to see. So I commend the Committee for examining a largely neglected but vital infrastructure issue. The purpose of dredging is to keep the ports open and operating safely. I have seen first hand the administrative gridlock which is quickly miring our national port system. In my district, 180,000 jobs are being threaten by the failure to dredge the Port of New York and New Jersey. 28 long standing permit applicants have been ordered to redo testing or even restart the permit process. One application was pending since 1986.

Gen. Chien, USACE testified before the House Energy and Water Appropriations Subcommittee the dredging problem at the Port of New York/New Jersey is at the edge of a crisis. Navigational channels that are suppose to be between 35 and 40 feet are silted to 19 feet in some places. Large oil tankers cannot enter normal offloading berths. The tankers are being lightered by exchange to barges in open water anchorages. It is only a matter of time before there is a major oil spill in one of the world's busiest ports.

The President held a summit over the spotted owl and the logging industry. This issues involved 20,000 jobs. The situation in the New York/New Jersey area alone involves more than nine times that number of jobs. The jobs are high wage, organized labor; longshoremen, truckers, warehousemen, crane operators and tens of thousands of other inland jobs that depend on the port traffic. It is not an isolated problem. Boston, San Francisco and Oakland are at roughly the same critical point. At some point, every port in the country will have this problem, even those that have dredge containment areas that are not yet filled. Since 95% of American's foreign commerce pass through our ports, this is the single largest bottle neck to the expansion of trade.

There are several layers of bureaucratic snarls. There is tandem federal jurisdiction. The U.S. Army Corps of Engineers is charged with issuance of dredging and disposal permits under section 404 of the Clean Water Act. The E.P.A. has jurisdiction over ocean dumping under the Marine Protection, Research and Sanctuaries Act and discharges into navigable waters under Federal Water Pollution Control Act. The problem is the ocean dumping regulations prohibit the disposal of material with "other than trace contaminants." The Ocean Dumping Act was passed in response to public concern about the disposal of sewage sludge and the appearance of medical waste on the shores of southern New Jersey. Dredged materials were incidentally

swept within the ambit of the act.

Since the Ocean Dumping Act was passed in 1988, the technology to detect trace contamination has gone from parts per billion to parts per trillion or quadrillion. The worst contaminant in the harbor is dioxin, thought to be in the range of 5 to 200 parts per trillion. The background level of this chemical in the human body in the general population is roughly the same. The standard for the disposal of dredged materials in the ocean is higher than any other environmental standard. It is stricter than standards for drinking water, air, food, medicine or the cleanup of a Superfund site.

Dioxin is hydrophobic, chemically it prefers not to bond with water. Once dioxin is in the sediment, it will stay bonded with the sediment. Any environmental problem would therefore involve lifeforms which reside in the sediments. It would be far better to dredge the contaminated material and remove it to another underwater site where it could be capped and reduce the access of sediment dwelling creatures to the contaminants. This would greatly reduce the further dispersal of the chemical into the environment.

Ocean oriented environmental groups insist that the dredged materials be disposed in contained landfills or decontaminated. Since the level of contamination is far less than what would be considered total remediation of a Superfund site, this would be a waste of precious landfill space need for the disposal of genuine hazardous wastes. Ironically, while dredge materials could not be disposed in the ocean, the vast majority of the material would be deemed suitable to contain a Superfund site. The option of decontamination is not feasible for the next 10 to 20 years at the scales required for major ports. In fact, the volume of silt and the extremely small amount of contamination underscores our current disparity between our technological ability to measure and our ability to treat or decontaminate. By way of analogy, it is one thing measuring the distance to Mars within a millimeter, it is another thing getting there.

The public appearance of the dredging situation is one of bickering between the Corps of Engineers and E.P.A. with a few other agencies like N.O.A.A. drifting in and out. It appears that there are turf battles at the regional levels of the agencies. That is not the case. It is a fundamental policy clash which must be resolved at the highest levels of government. Among the issues that must be resolved are:

1) A federal district court case over the issuance of permits. Clean Ocean Action sued E.P.A. and the Corps. The government won every motion except the court noted a discrepancy in the regulation and require a test which was required for the disposal of sewage sludge. Dredge material is mostly solid and sewage is mostly liquid. The test the court ordered was inappropriate but legally correct. The regulation was not drafted to distinguish dredged materials although the agencies administered the sludge and dredged material differently. Both the Corps and E.P.A. have submitted affidavits requesting the court to reconsider the testing. It will

be necessary to rescind the regulation and advise the court of the error.

2) The 1991 Green Book which provides a spectrum of revised environmental tests was raced through the administrative process. There has been much criticism that many of these tests were not based on any scientific correlation to natural processes in the environment. With respect to the dredging problem, there is particular criticism of the testing regime which is estimated to change the amounts of dredged material that are rated as category 1. Category 1 means dredged material is acceptable for unrestricted ocean disposal. This category now accounts for 90% of the volume of dredged material. Under the new testing regime only 40% or less of material is estimated to be category 1. Remember this is a 50% increase in the cost of dredging with no evidence that there is any benefit for health or the environment. The Green Book testing standards should be reconsidered on the basis of genuine scientific assessments of the impact on the environment.

3) Related to this is another form of testing related to categories 2 & 3 called amphipod testing. Amphipods are a small crustacean micro-organism. They are a very good indicator of water quality when found in the natural environment. However the test regime instituted in 1991 required large scale revision in 1993. E.P.A. had to issue extensive guidance including ten factors which had to be controlled precisely or the organism would die in the test whether or not it was exposed to pollutants. There are a myriad of problems with this test. If the agency is sued on this issue, formidable scientific evidence can be marshalled against it. The Amphipod Test should be revised or replaced with a test based with a replicable test.

4) Dredging of ports should not be considered as part of Section 404 of the Clean Water Act. Originally Section 404 was the authority to regulate dredging. Over the years, wetland regulation and protection has become the greatest part of the regulatory aspect of the section and the dredging aspects have lost priority. The main reason is the nature of the issues related to wetlands and commercial dredging. Controversy arises over wetlands when there is a proposal for development or a change in a long time use. These proposals are intermittent, site or ecosystem specific and entail speculative property values. Commercial dredging projects are generally regularly required, as required by the natural disposition of silt, the site location remains the same and there are known economic values associated with the port operation. Controversy arises in commercial dredging projects in regard to the disposition of dredged material. Dredging for ports and harbors should have its own separate legal policy and permitting process with clear lines of authority and predictable timelines. I plan to offer an amendment to create this process when the Committee considers the Clean Water Act.

I would like to commend the Clinton Administration for becoming increasingly sensitive to the potentially destructive consequences

of the bureaucratic gridlock over dredging. I salute the efforts by Secretary Pena in establishing an Interagency Working Group on the Dredging Process. I think our efforts in this matter acted as a catalyst. Secretary Pena has recognized the difficulties and delays that result from the complexity of obtaining federal and state approval and the problem of disposing of dredged materials. But, I am concerned that the Working Groups recommendations will not be in time for consideration in the reauthorization of the Clean Water Act.

On March 23, 1993, one of the witnesses today, Mr Perciasepe, of EPA and Gen. Genega of the Corps met with me in my office and we had some very productive discussions about the dredging problems. On March 25, further meetings between the agencies were conducted to consider the long list of unresolved permitting problems. This led to an April 8 release of an action plan committing the agencies to "expedite dredging permit review."

While we are pleased that the agencies are making progress towards removing the gridlock, time is of the essence. Recently, there was nearly a very serious accident in New York Harbor. A barge carrying petroleum products was struck while lightering cargo from tankers which cannot safely navigate to the terminals because of shallow depths from the lack of dredging. I look forward to the report on the progress the action plan has made nearly a month after its release.

I am working on legislation called Green Ports to address the environmental security of all The nation's ports. Our ports are missing out of many of the initiatives like infrastructure reinvestment or promoting dual usage in defense conversion. There is a Maritime Systems Technology Office at the Advanced Research Projects Agency. Currently its goal is the application of state of the art technology to help make ship building more competitive. Frankly, we are missing a sure bet if we fail to apply our technology and training techniques to our ports. Since the advent of containerization, we have greatly speeded the loading and unloading of vessels. We can speed the intermodal transition into and out of the ports. The longer that a vessel stays in port the greater the chance that there will be a mishap causing pollution to enter our waterways. The longer containers and cargo stay in the port area, the longer customers must wait and the greater the chance of loss, pilferage or environmental mishap. A port may never be a pretty place but it does not have to be an eyesore, a source of pollution or a bottleneck for commerce. There have been some remarkable improvements in the oil spill containment and cleanup technology. We need to help our port facilities implement these techniques.

With respect to dredging, there are a wide variety of technologies that are under utilized. The low turbulence dredge clams can help prevent mixing of contaminants during dredging. There's the cone penatronmeter, which use blue laser technology pioneered by the Navy to speed testing and location of pollutants both in ground water and

sediments. This should reduce the enormous costs of testing and monitoring as well as more quickly isolate hot spots of contamination for remediation.

There are other contaminants which should be destroyed. There are several processes which have shown great promise in destroying even persistent chemicals like dioxin. A hydrogen reduction process was successfully used in Saginaw Bay. Clean coal technologies may be useful. We should promote such technologies now and develop incentives to speed creation of processing scales needed for the size of the Port of New York and New Jersey and other large ports.

The point of this legislation is to promote working full scale projects. There have been enough studies, I believe we must act. We must act as a nation. This is not just a local problem of New York, New Jersey and maybe Massport. We must secure the support of not only the other ports across the nation but we must secure the support of the export shippers who use our ports.

Finally, we need to establish a comprehensive program to facilitate the citing and construction of environmentally sound, dredged material disposal sites and confined disposal facilities. Wetlands subject to section 404 should be excluded. This program is needed because of the shortfall in capacity for confined and landed based disposal. A possible solution is for local, non-federal interest to be subject to the general cost sharing principles of the Water Resource Development Act not only for navigational dredging projects but for the disposal of the dredged material. This would reduce the disparity of treatment for open water disposal, for which the federal government shares the cost with local sponsors and confined and upland sites which is total, non-federal, local cost. The longer we debate and search endlessly for "long term" solutions, the more cargo and jobs our ports lose to Halifax, Vancouver and Veracruz. If we work together there is no problem we cannot solve.

Mr. BORSKI. We welcome our first panel this morning.

[Witnesses sworn.]

Mr. BORSKI. Mr. Perciasepe, you may proceed, sir.

TESTIMONY OF ROBERT PERCIASEPE, ASSISTANT ADMINISTRATOR OFFICE OF WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY; AND DR. JOHN H. ZIRSCHKY, ACTING ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

Mr. PERCIASEPE. Good morning, Mr. Chairman, and thank you for the opportunity today to speak before the committee and give you an overview of some of the water and wastewater infrastructure needs and status in the United States.

If it pleases the committee, I am going to try to work from these charts over here and will either speak loudly you let me know if you can't hear me or try to use one of the hand-held mikes.

The first point I want to make regards the existing funding levels currently for water and wastewater in the United States, and these are based on a number of different estimates. Let's do wastewater first.

Regarding wastewater, we estimate that about $10 billion is spent each year in the country on wastewater. Now, that includes some proposed spending under the proposed Clean Water Act reauthorization that has been mentioned by several Members here today.

That is broken down in the following way: A little over 50 percent from local sources; about 7 percent from State sources; about 11 percent from Federal sources other than the EPA grant program—for instance, that includes things like the Rural Development Administration, Community Development Block Grants, things as small as the Appalachian Regional Commission, there is funding there; and finally, about 26 percent on an annual basis coming from the EPA revolving loan fund program. And so that is a very substantial amount of annual expenditure, and it comes from those variety of sources.

On the drinking water side, we have about $6.5 billion spent each year in this country on drinking water, and you can see the chart is slightly different in that almost 70 percent comes from State and local sources. The larger portion of Federal funding comes from other Federal sources, and a small proposed portion will come from a new revolving fund program in the Safe Drinking Water Act that has been proposed by both the Senate and the House, and also by the President in the administration's position on Safe Drinking Water Act reauthorization as well as in the President's budget that will be before the Congress both in the 1994, and in the 1995 budget. So the creation of a revolving fund there as well as other sources, similar to what I mentioned earlier—Rural Development Administration, community development block grant program, and others—would provide the Federal share.

I think the important point that I want to make here is that there is a significant amount of funding being provided in each one of these areas at this particular time. But I think one of the key questions the committee wants to attack and start to get a feel for, is: is this enough, and is it covering the needs that we have? And now I am going to try to talk about that to some extent.

I am going to put this chart down here, because I will come back to it. This is a mystical chart in a way because some of the things are blocked off, because I had to be sworn in here and I want to make sure I don't misrepresent any of these numbers.

But the key is that there—on wastewater—let me do that one again first—we do, every two years with the States in the country, a needs survey. This needs survey gets down to the county and municipality level on what their wastewater construction needs are, both in terms of ongoing rehabilitation, as well as the needs for meeting some of the Clean Water Act's specific requirements.

When we look at that need, as you have pointed out in your letter of invitation, it is about $137 billion of need. Now, that figure is a current estimate of what it would take to meet the needs for the next 20 years.

One of things we have known from the past 10 years of doing the need survey is that every year it increases a little bit, because new needs come on. I mean, the infrastructure needs to be rehabilitated, it is not static. And so, if you project a rate of growth similar to the past kind of rate of growth on that need, we would see that the current spending—if you wanted to do all of the things that would be needed over the next 20 years—will fall somewhat short of the annual need, if you wanted to analyze all of those needs out into the future.

Now I am pointing out, and I want to make this clear—these are not all needs just because of Federal requirements. These are needs that include the routine and needed infrastructure replacement. We know that there is a replacement rate, capital operating, capital maintenance that needs to be done on all of the infrastructure.

I did have an experience of my life doing the capital budget for the city of Baltimore for six years, and we had things in there to replace roofs under drinking water plants. Those are not Federal mandates; those are requirements of running a utility. So those are included in here.

Likewise on drinking water, we don't have as good a history of needs surveys as we do for wastewater. We are starting to do such surveys now, and it would be a requirement under the new Safe Drinking Water Act.

However, we do have information from the American Water Works Association, from the census data, and other sources that we have been doing with the States, and we can estimate again that the analyzed need for the next 10 to 15 years would be slightly higher than the current rate of expenditure based on what we have been able to determine.

Now, one of the important points that I want to make here is that this funding has changed historically over time. Before World War II, these pie charts were mostly local and State, and now, since World War II, there has been a slow evolution of an increasing piece of the pie being Federal.

If you look at both of them, it is not dissimilar. It is almost 40 percent in wastewater when you include all of the different sources and it is a little over 30 percent or 33 percent or so if you look at drinking water, again, including all of the different Federal sources that are put into the mix.

Again, there is a very legitimate Federal need and reason to be involved with this. From an economic development standpoint, when you are talking about community block grants, rural development administration, and even in the EPA program, sound infrastructure at the local level means good opportunity for economic development. When you are talking about environmental improvement, when you are talking about public health, they are all reasons, legitimate Federal reasons, to be involved at this level of funding.

Regarding the diversity of funding, I like to call it a three-legged stool instead of a one-legged stool in that when you have diversity of funding sources you have strength and stability in where the funding is coming from. So I think that that is an important part.

But the other thing that I want to point out is that, yes, there are Federal requirements being placed on these utility systems in the United States, but they are also ongoing, routine maintenance and capital investment requirements as well that have nothing to do with Federal requirements. So one could almost say that the Federal contribution already is substantially financing the kinds of Federal requirements and the kind of Federal interests that we would have in these programs.

The last thing I want to talk about, and then I will try to wrap it up, is where are we going from here in terms of our infrastructure development, and I am going to use the Clean Water Act proposals that we have made to Congress as an example of what we see in the future on wastewater, and I think several Members brought up the revolving fund.

This chart shows the history of Federal investment into the revolving fund from 1987 through 1994, and these bars add up to about almost $10 billion. What we have proposed, and shown here, is the 1995 budget request here of $1.6 billion.

What we have proposed is a commitment in the authorization, in the Clean Water Act out to 2004, of approximately another $13 billion. Now, the idea with that kind of investment into the revolving fund is that we develop this kind of long-term commitment.

Now, here is 1995 here, this red line. What is underneath this curve, what is in the green colored-in area, is the amount of money that is generated by the revolving fund based on our projection each year.

And so what our goal is is to keep that funding level over $2 billion a year out into the future, and this goes out to 2026. And that level of funding that I demonstrated here will provide the ability to have the revolving fund revolving, adjusted for 1994 dollars. In other words, this would go up if we didn't bring it down to adjust for inflation, so that with the Federal contribution, the State match that would be required, and leveraging that some of the States are doing, the annual investment would be over $2 billion a year, which would roughly keep the pie chart I showed you constant from the Federal perspective. And this is the kind of analysis that we have been doing.

I might point out for Mr. Gilchrest that one of the things that we have included in this model was a negative 2 percent interest rate option for a portion of the amount of money that goes to the States, so that they could go to a negative 2 percent interest rate.

Sort of like getting 80 cents back on the dollar, and that is factored in in terms of the long-term integrity on this model that I have run here. I might add that at a 6 percent market rate, a negative 2 percent interest is equivalent to a 53 percent grant.

So I guess the summary that I would like to make is that there is a substantial amount of money being spent each year on this infrastructure; there is a substantial Federal contribution, in excess of 30 percent in both cases, and that we have—or you could have—a similar chart for the clean drinking water, although it would be smaller. We have a commitment to the future here in terms of a Federal investment. I will stop at that.

Mr. BORSKI. Dr. Zirschky.

Dr. ZIRSCHKY. Mr. Chairman, I will paraphrase my statement and ask that the full statement be put in the record.

Mr. BORSKI. Without objection, so ordered.

Dr. ZIRSCHKY. The Corps has been involved in the Federal Infrastructure Strategy for nearly three years now. As a result of that effort, we found that policy development should be driven by three aspects: the need to consistently apply economic analyses; the need to focus on low capital solutions; and the overriding need to better manage what we have.

In working with the other Federal agencies, we came up with a recommended strategy to ensure that our Federal dollars go for the highest quality investments that will yield the maximum benefits. This includes making sure that our facilities, once built, are affordable and can be operated by those who benefit.

One of the outputs of the Federal Infrastructure Strategy was an Action Agenda. The President took one of the recommended first steps by signing an Executive Order, The Principles for Federal Infrastructure Investments in January of this year. I will briefly touch on some of the Corps' infrastructure activities.

We are, I believe, one of the original infrastructure agencies in the country. We were formed during the Revolutionary War to help fight that war and then disbanded. Then in 1794, almost 200 years ago, well, 200 years from next Monday, Congress decided to reformulate a Corps of Artillerists and Engineers primarily to protect the Nation's ports. The Congress recognized how important the ports were to our country, our commerce and our defense.

Currently, we maintain 200 deep draft ports, 635 shallow draft ports, and 17,000 miles of intracoastal and inland waterways. These ports handle over a billion tons of foreign trade and a half a billion tons of domestic trade, with 600 million tons of cargo moved on the inland waterways.

In terms of the ports, containerization is a big trend in the ports of the future. By the year 2000, it is predicted that 90 percent of the cargo will be containerized. To handle those ships, our ports need 40 to 50 feet of draft. That means dredging is going to become even more important to our Nation's commerce.

The Water Resources Development Act of 1986 authorized the Corps to improve 50 Harbors. We have completed work or are nearly done on 20 of those. It is our hope that as we proceed and progress in our efforts, that our Nation's ports will be even more competitive and in a better posture to compete in the next century.

Funds for maintaining our ports is provided by the Harbor Maintenance Trust Fund in which we receive about $700 million and expend about $500 million annually in maintaining our ports.

As I mentioned, the Corps operates 17,000 miles of inland and intracoastal waterways. Traffic on those waterways is currently growing at about 1 to 1.5 percent per year.

Barge traffic is a very economical and environmentally friendly way to move cargo. One tow's combination of 15 barges can handle the traffic of about 900 trucks. Maintaining our locks and inland waterways systems is an area that we need to work on in the future.

The Inland Waterway Trust Fund pays for some of the replacement and rehabilitation costs, but not the operation and maintenance. We recently did an economic analysis to determine the optimal strategy for maintaining this system and found that the Inland Waterway Trust Fund can't support this level of activity. Therefore, we are focusing on making our operations the most efficient and targeting some of our most strategic and most important locks for rehabilitation or replacement.

In the area of water supply, the Corps' role is somewhat limited. We do operate the Washington Aqueduct which provides water for the Washington, D.C. area, Virginia, and many Federal facilities.

We also have some authorities to provide storage at Corps' projects and to provide surplus water contracts at some of our reservoirs. We have the authority to do some water assessments and are currently scoping a study on how we can determine what are the water needs of the future. This is an infrastructure study of what are going to be our critical areas of the country for water supply. The last time this was done was in 1978, so we hope to update that.

Water supply, as well as our transportation, is very critical to commerce. Industry needs water, people need water. Many areas of the country are currently having water shortages and in a drought, that would reach critical proportions.

With that, I will conclude my statement. Thank you.

Mr. BORSKI. Thank you, sir.

Mr. Perciasepe, in testimony that will be presented later this morning, a witness will raise concerns that EPA discourages communities from using their SRF funds to deal with nonpoint source controls and nontraditional solutions to water quality problems.

What is EPA's position on allowing communities to use their SRF money for the full range of eligible uses?

Mr. PERCIASEPE. Our position is that nonpoint source controls are eligible for SRF funding.

I think one of the difficulties in that, and again, I can speak from some experience from trying to do this in Maryland, is that the revolving fund envisions a repayment, or somebody who is going to make repayments. And loans for nonpoint sources, which are sometimes loans to groups of property owners or smaller entities, don't have a rate base like a water and sewer system to provide revenue for loan repayments. That is not to say that there aren't ways to do it and that we aren't experimenting with different communities on how to do it.

We are working with one State in the country now to devise an approach, that we call "linked deposits," where we use the revolving fund and we put a deposit from the revolving fund into a local bank that is in the business of making loans in agricultural areas. They use the interest they earn on the deposited revolving fund to help write and buy down the loans that they make through their normal lending capital to make low-interest loans to agricultural interests. As a result, the Federal money isn't actually making loans to private property owners, but it is used to subsidize the rates just as it would be under other circumstances.

We are trying to see if we can work that kind of an arrangement out, where we and/or the State are not getting in the creditworthiness business of an agricultural entity, but instead, using the existing sort of farm bank kind of infrastructure, are financing infrastructure that is already in place. So we are looking at every possible approach that we can come up with to find innovative ways to make that work better.

Mr. BORSKI. Mr. Perciasepe, you indicated in your testimony that the administration does not want to support a drinking water State revolving fund that funds infrastructure needs not responsive to Federal requirements. Well, it is hard to imagine there are any.

Would the administration support funding for projects that are only partially in response to Federal requirements?

Mr. PERCIASEPE. Yes. The truth of the matter is, from an engineering perspective, it may be hard to completely draw a line on a particular project, so I would imagine that by some circumstances that would occur even under that stated policy.

But one of the things that we really want to make clear—we are not talking about the same amount of money in the drinking water fund that we are under the clean water revolving fund. While drinking water is an expensive proposition for every community in the country, it is expensive with or without the Federal requirements, because running drinking water and water supply systems is expensive.

You have to have the source; you have to have the treatment; you have to maintain the distribution system. That occurs regardless of the Federal cost. We want our money to be targeted to that incremental cost on top of that that we see as the national drinking water security system, so that wherever you go in this country, you can be assured that you are going to have a relatively constant quality of drinking water. And I might add that that is an increment on top of the normal cost of running these utilities. So we would like to focus our funding on that. But I think by virtue of engineering and construction, et cetera, that there will be some merging of some of those.

Mr. BORSKI. Mr. Perciasepe and Dr. Zirschky, President Clinton has established an interagency working group on the dredging process to avoid delays in important navigation projects without compromising the environment. Can you describe to us how your agencies plan to cooperate to achieve these two essential goals?

Dr. ZIRSCHKY. There are a number of Administration initiatives. Let me give you a broader picture and then get specifically to what we are doing together.

Secretary Peña, through the Maritime Administration, has a dredging task force to bring the agencies together, and it is hoped that next week we will have an options paper out to explore some of the ways we can improve dredging.

The Corps is working on a partnership program with the American Association of Port Authorities to identify issues and come up with action plans for how we can meet their needs, for example, model project cooperation agreements for dredging.

Specifically, EPA and the Corps are beginning to work on a memorandum of agreement so that we can bring some consistency and predictability to the dredging process. Mr. Perciasepe and I have talked, I believe last Thursday was the most recent time, on this very issue. We currently have a draft regulation to address some of the testing concerns. I believe we received that today and will have that back to EPA by the end of the week so that they can act quickly.

We are committed to working together to try and address issues that perhaps in the past haven't received the attention they needed.

Mr. BORSKI. Mr. Perciasepe?

Mr. PERCIASEPE. I would just echo that testimony and add that we are also working at EPA on a contaminated sediment strategy that would broadly coordinate the agency's activities in this area so that we are not piecemealing the regulated community and the port community as to how our approach is evolving on this.

So I think it is not only an interagency coordination, but there is also a need for coordination inside the agency, and that is why we will be putting out a strategy out for public comment soon on how we would approach that.

I would add one thing that I would think—I hope comes out of the MARAD, the Maritime Administration process that both of us are involved with, that Secretary Pena started, and that is that there is not only a rationalizing of some of the interagency coordination and some of the requirements, but also a firm national commitment to improved long-term planning for ports. This way, we won't find ourselves in these bottlenecks. We have a thought-out plan, and from the Environmental Protection Agency, and I know from the Corps of Engineers, we are all committed to making that kind of a joint commitment with the port community in terms of working together on that.

Mr. BORSKI. Will you be developing incentives for land-based disposal of contaminated dredge material?

Mr. PERCIASEPE. Incentives, I am sorry. I don't know the answer to that. Incentives. You can look at that in a lot of different ways. I think what we want to do is have incentives for long-term planning that has environmentally-sound solutions so that we are not in a permit-by-permit crisis basis. That could include upland as well as other containment sites, as well as management in place, you know.

There is a whole host of things that have to be looked at. I think the main incentive that we need is the impetus to do the planning, rather than the avoidance of making the hard decisions on the planning.

Mr. BORSKI. Dr. Zirschky.

Dr. ZIRSCHKY. We are also trying to work through the issue of cost-sharing of confined disposal facilities and hope to make some progress in that, perhaps in time for our 1994 authorization bill. But at present, we don't have an answer to that.

Mr. BORSKI. Dr. Zirschky, later on this morning Mr. Lawrence will testify for the Inland Waterway Users Board on their proposal for spreading our limited inland waterways trust fund dollars over a larger number of projects by using lower cost technology such as cellular construction and prefabricated lock sections. You have mentioned such technology in your testimony.

How receptive is the Corps to these innovative technology proposals?

Dr. ZIRSCHKY. Very receptive. Both the Corps and the Administration are committed to trying new technologies. We are working on things like trying to use the coffer dams as part of the lock system. Float in of prefabricated components, so we don't have to construct as much on site is an option to which we are very receptive.

Mr. BORSKI. Does the Corps apply life cycle costing among different technological approaches?

Dr. ZIRSCHKY. Yes, I believe we do.

Mr. BORSKI. I will yield to the gentleman from Maryland.

Mr. GILCHREST. Thank you, Mr. Chairman. I would like to follow up on one of the questions the Chairman raised about finding ways to improve projects and streamlining interagency cooperation to facilitate the permitting process.

Right now, whenever there is dredging or disposal of dredge material in many areas the National Marine Fisheries and Fish and Wildlife are a part of the permitting process.

I understand the need for long-term planning. I think the movement now is to have—especially to avoid the individual problems and the lengthy time it takes to get a permit. And I think we are moving in the direction of watershed management for a particular region which, if we are looking toward watershed management, I think—and here are the two questions, I guess. If the Corps and EPA are to improve and streamline the permitting process, where do you see NMFS and Fish and Wildlife fitting into this new plan? And if we are looking at the Nation's waterway and specifically water quality, and we are moving in the direction of watershed management, where will the data—how will you collect the data which I think should be included in this for the cumulative impact of dredging of more marinas or of construction projects and things of that nature?

So where does Fish and Wildlife and NMFS fit into this new streamlining process, and how about the cumulative impact? Where do you get that data from and how can that data be used?

Mr. PERCIASEPE. Well, I will give it a first shot.

First of all, most National Marine Fisheries and Fish and Wildlife are part of our process under Secretary Pena's team that are all working together and they are involved with putting together the strategies or the options for dealing with the issues.

We had a whole series of public hearings across the country in different areas during the winter and we are preparing to start another series of hearings where we lay out what we have heard and

some of the options that we have discussed for resolving them. They are part of that team.

And I think what Dr. Zirschky was talking about was the fact that within a week or so we are going to have our draft options documents, and we are going to go back out and have some more public listening sessions to talk about those. And that group will include, and does include, National Marine and Fisheries and the Fish and Wildlife Service. So they are very much a part of the process that we are working on.

On the long-term——

Mr. GILCHREST. Let me just ask the question, right now Fish and Wildlife I know, in this permitting process, can voice their reservations even to the extent to elevate this—in other words, to move up to a new—to elevate a project that they disagree with. Even though the Corps may agree with it, even though EPA may agree with it, they can elevate it to have it reviewed again. I don't think NMFS has that same legal potential to elevate a project. I am not sure. They certainly can address their reservations, and I saw a couple of heads nodding. Can NMFS elevate a project such as what the Corps, a dredging project for a marina, for a construction projector, a waterway?

Dr. ZIRSCHKY. I believe they can.

Mr. GILCHREST. NMFS can elevate. How would, then, Fish and Wildlife and NMFS, who have the ability to voice their reservation to the point of elevating a project which means they can stop the project, at least for a time, if we are going to streamline the permitting process, will they still have the potential to do that?

Mr. PERCIASEPE. Well, we certainly haven't laid out that kind of detail, Congressman. But I would have to say that one of the things that we have been able to do successfully with the Corps in the past on issues of permitting of this nature is put time limits on things, so that, issues have to be resolved and that we don't drag it on forever. Let the chips fall where they may.

But instead of dragging things on forever, one option that we are looking at is how do we adhere to some kind of time sequencing on these matters. But this is far from resolved in terms of this process that we are going through.

Dr. ZIRSCHKY. Part of the effort is also to get to know the people in the different agencies. In the past, we perhaps have been a bit standoffish. We are trying to strengthen our partnership relationships. I previously worked with Kate Kimball over at Commerce and Bob Davis, who is at Interior. We invited Mollie Beattie, the Director of the Fish and Wildlife Service over to the Corps headquarters to learn more about what we do and the problems that we face. If we can develop some of those personal relationships, get our staffs working together better, I think we can address some of these issues as they come up a lot easier.

On the watershed management, that is not an area that we particularly get all that much involved but there are some efforts we are trying to do, specifically on the dredging, to try and determine where does the material that needs to be dredged come from.

I believe in our last year's appropriations bill we were authorized to undertake a modeling effort to see if we could—for example, if you are in the Chesapeake Bay and have contaminated sediments,

try and predict where in the watershed they came from, so that you can take remedial measures upstream so that the sediments never get down into the harbor to begin with.

Mr. GILCHREST. Is there any—in reorganizing all of this, is there some attention being paid to a cumulative impact? When you are looking to approve a dredging project, a construction project, a marina project, impact on nontidal wetlands, there is a whole range of things that are considered: the type of soil, whether the dredge material is clean; whether you are going to take down too many trees; whether wetlands are going to be filled to prevent an island from being washed away or whatever. There is a whole series of things that you take into consideration before the letter of intent is issued to permit a project.

Do you or can you include, since we are moving in a watershed approach, do you include cumulative impact of how many marinas are already here, how many buildings are already here, as far as that impact to water quality? Is that data possible to collect?

Mr. PERCIASEPE. It is difficult. I think to some extent it is taken into account, particularly in the 404 dredge fill permitting process. In the 401 process, there is a section under the Clean Water Act which is the State water quality certification. There is some ability there to take into account those cumulative impacts.

For instance, if you are doing overboard disposal of some dredged material in a place like the Chesapeake Bay, there is a way to say, particularly regarding an individual site, that cumulatively that is as much that can go there, that you have to move to another site or find another solution. And I know that that kind of work can be done without too much difficultly. But I think some of the broader cumulative impacts are limited by, our ability to scientifically determine them. But I think the authority to do it is there.

Dr. ZIRSCHKY. I am told that we do try to do it, but we consider it an inexact science. We need to improve our ability to quantify those cumulative impacts.

[Subsequent to the hearing, the following was received from Dr. Zirschky:]

We consider cumulative impacts as a part of our National Environmental Policy Act (NEPA) evaluation on every permit action we take, whether it is the approval of an individual permit or the development of a general permit. Current practice focuses on considering the effects of the activity when viewed in light of other permitted activities in the same general area, on the resources (e.g. wetlands) that would be affected by the activity. However, cumulative impact assessment continues to be a difficult task. Under our NEPA process, there is no standard way for assessing cumulative impacts. Assessments are made on a case by case basis, taking into consideration the available information base. In addition, each Corps district has an understanding of development pressures in the areas they regulate. In areas of greater development pressure, typically more information available and the analysis is more thorough.

We are looking to improve this aspect of our NEPA review. The Council on Environmental Quality (CEQ) is currently developing a handbook which will address cumulative impact assessment. The handbook is expected to provide generalized guidance on the state of the art in cumulative impact assessment, and is projected for completion towards the end of this summer. We would expect to use the CEQ handbook, when it becomes officially available, and subsequently to issue Army guidance placing more emphasis on cumulative impact assessment. We intend to work closely with CEQ in developing our guidance.

Mr. GILCHREST. I will just end on this. I would like to keep talking about this, but I don't want to take up too much more time.

I have had a number of projects permitted by the Corps in my area of the Eastern Shore of Maryland, and with no basic reservations commented by the EPA adversely. But Fish and Wildlife and NMFS seem to be the lead two agencies in dealing with this difficult science of cumulative impact.

But haven't we reached a stage in our development, in our technology, in our ability to observe a region much more globally, to not only predict the number of developments and how adversely they would impact water quality, but have the ability to understand that while one particular project meets all of the criteria to be permitted, and then a half mile down the road or a mile down the road another similar project meets all of the criteria to be permitted, but then the accumulation of all of these projects over the next 10 or 15 or 20 years, it seems to me could easily be predicted as far as their adverse impact on water quality and fish habitat.

So instead of permitting one project at a time, isn't—can't the Federal Government at least give some guidance and some information—and I don't want to put the whole burden on the Federal Government, because I know a lot of it has to do with local—the planning commission and the county commissioners and all of the rest of the stuff. But at least add a paragraph on the ongoing communication between agencies and with the local community about cumulative impact?

I dare say that most people, Federal, State and local, never talk about cumulative impact, maybe don't even know that cumulative impact exists. But when I see the—and I will be just colloquial for a second, when I see the Eastern Shore of Maryland and I see what probably Staten Island looked like, rural areas of this country, especially in a geographical location as Maryland is, can go just like that. So I would just ask that this be a part of an ongoing study that you have.

Thank you, Mr. Chairman.

Mr. BORSKI. The Chair thanks the gentleman. The distinguished Chair, the gentleman from California, Mr. Mineta, is now recognized.

The CHAIR. Thank you, Mr. Chairman. I have no questions of either Secretary Zirschky or Mr. Perciasepe, but I would like to welcome both to the committee and to say that I appreciate their being here. Thank you very much.

[Chair Mineta's prepared statement follows:]

NORMAN Y. MINETA, CHAIR

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

HEARING ON
WASTEWATER, WATER SUPPLY, PORT DEVELOPMENT,
AND INLAND WATERWAY INFRASTRUCTURE NEEDS

MAY 4, 1994

Water plays a critical role in our nation's infrastructure picture. Whether it is control of floodwaters, provision of hydroelectric power, control of rivers for navigation, dredging of ports, provision of drinking water, or the cleanup of wastewater, the many varieties of water-related infrastructure dramatically affect our quality of life every day.

Unfortunately, our water-related infrastructure is falling further and further behind the needs of the American people. Each year, when EPA surveys wastewater treatment needs, our infrastructure deficit gets bigger rather than smaller. In 1992 our needs were $137 billion, but we were only spending $9 billion each year -- at all levels of government -- to meet those needs. We need to spend more on cleaning up our wastewater, so that our grandchildren will be able to fish and swim in the waters that we fished and swam in when we were children.

Spending more on wastewater infrastructure, of course, is only part of the solution. We also need a strong Clean Water Act to control other sources of pollution, such as point sources of highly toxic contaminants and urban and agricultural runoff.

We have a long way to go in cleaning up our drinking water. People in America assume that we are different from other countries, that our drinking water is clean. But would you believe that in the United States of America in the 1990's 900 people die every year due to contaminated drinking water?

Locks and dams on our inland waterways system are essential in allowing tugs and barges to get our export commodities to market. They play a critical role in our nation's competitiveness. Yet many of our locks are over 50 years old, and the vast majority are too small to handle modern barge tows. The result is delays and higher costs. The Corps of Engineers estimates that we have 19 lock and dam projects that are needed, but we only have money for 4 to 6 projects per decade. Once again, instead of addressing our needs, we are letting them grow.

I commend Congressman Borski for calling this series of hearings on infrastructure needs, and I look forward to hearing from the witnesses today how we can meet our needs more effectively.

Mr. BORSKI. The gentleman from New Jersey, Mr. Menendez.

Mr. MENENDEZ. Thank you, Mr. Chairman.

I would like to pursue the questions of dredging. I, first of all, want to applaud the respective departments for their moving ahead with longer-term strategies. But I am concerned about some short-term consequences.

Let me say, Dr. Zirschky, that I think that your statement of characterizing the relationship between your respective departments as standoffish is an understatement. It has been more like the War of the Roses. And the people who are in the cross fire are the regulated community, thousands of people who have jobs who are at stake here, billions of dollars of economic activity, and looking at supposedly the greater opportunity for international trade which you cited in your statement diminishing that opportunity. So I hope you really cozy up to each other real soon, because we can't afford much more time.

Let me specifically go—there was a meeting that we had on March 23rd with EPA, with OMB, the Corps in my office, and we outlined three immediate concerns in reference to the Port of Newark—New York and New Jersey, and specifically in my district the Ports of Newark and Elizabeth. Those were that the court had ordered in a case-suspended phase bio cumulation testing which is the result of regulations that failed to distinguished between sewage, sludge dumping, and dredging.

Problems with testing and having them round-robined and legitimized so that they can be replicated, and the retesting requirement for applicants whose test data was considered stale, even though the time lags were caused not by them, but by administrative delay, as I cited earlier, in one case eight years, and in most cases three years, to me that is government out of control to simply get an answer and to have a moving target in terms of standards.

So while I support and want to help with all of your longer-term issues, we have a lot at stake right now, both in terms of national security, because some of these are military ports, and others in terms of commercial activity.

So I would like to know, one, what has happened to actually implement the April 8th strategy plan; two, specifically we had a second meeting back in New Jersey on April 18 with representatives of both the Corps and the EPA. We thought we were going to already have a final rule in terms of the sludge dumping which has nothing to do with dredging, and it is just a defect in regulatory processing and can cost applicants $150,000 if they have to pursue it.

We still, as I understand, don't have that a month later. I would like to hear from both of you where are we at and where are we heading and what time frames are we talking about, because we don't have, as I read, and then I will stop, in your written testimony, we don't have until the end of fiscal year 1996 to solve some of these permits as we decide what are our ultimate dredging options.

So I would like to hear from both of you to the extent that you can elaborate for us on those issues specifically and where are we heading with some of the immediate shorter-term concerns.

Dr. ZIRSCHKY. On the suspended phase testing, we received a draft of the rule, I believe today, and will turn it around by the end of the week back to EPA.

On the retesting, the three-year retesting, we currently have, I believe, a draft of that we are working on and should it have to EPA, I hope within the next week or two.

Just in general, we are committed to working on these problems. I have met with the Port of New York, New Jersey, three times in my two-and-a-half months. I know the Secretary of the Army has met with the Ports of New York and New Jersey. Monday, I was in New York and met with our division and district engineers about it. So we are committed to turning things around as quickly as we can.

Mr. PERCIASEPE. I will just add that the regulations have been drafted, and we are circulating them in the interagency process to make sure there is no problem. I have to make a decision with the Administrator within the next several days about which Administrative Procedure Act process we have to follow or use to get them done as quickly as possible and minimize the legal challenge that may come.

I am committed to doing it as quickly as possible, but, you know, by taking an extra month right now we may be able to lower the opportunity for legal challenge later. This may be something that I might want to talk to you personally about, but under any circumstance, we are looking at doing it this summer, or sooner if possible, and not having a legal challenge.

And as soon as I have that review done—we didn't stop any of the work, Congressman, the work in terms of drafting; everything is ready to go. We just have a couple of key decisions here that we have to look at, both timing and legal vulnerability—I will probably want to talk to you personally about it, just so you are advised as to what the thought processes are. But under all circumstances, we are talking months, if not weeks, under some circumstances.

On the retest, the three-year retest that you brought out, I mean both of us have agreed, and the draft guidance has been prepared stating that the retest is not mandatory, it is optional. We are advising and will shortly advise all of the districts and regional EPA offices in the country of how they go about doing that.

The other thing I want to point out that we have done in the last month is that we have been working pretty hard with the labs and have created quite a bit of consternation, but we are trying to make sure that the testing that is done is done quickly and correctly the first time so that it doesn't have to be repeated. And I think that we are making progress on that front.

I might add a personal commitment that notwithstanding the need that we all recognize for a long-term plan there that will get us out of these log jams, it is going to require both of us and others, as has been already pointed out, in the Federal Government, to make short-term decisions to solve problems. And I can tell you I am personally committed in terms of the Environmental Protection Agency to making those short-term decisions to get the short-term solutions.

It is my hope, aspiration, and desire that there will be a long-term vision in place that will provide the context for those short-term decisions.

Mr. MENENDEZ. May I briefly follow up, Mr. Chairman? I just want to make sure that I don't leave here today thinking that we are well on the road and then finding ourselves at some other hearing at some other time.

When you say the draft rule at the end of the week turning it around to EPA, the draft rule on the question of the bio accumulation testing?

Mr. PERCIASEPE. Yes.

Mr. MENENDEZ. How long will it take after EPA gets that?

Mr. PERCIASEPE. We have to promulgate that rule, and you know, I don't have the authority to decree it to be in place. We have to have some—there is an Administrative Procedures Act that we have to follow, and there are a couple of different approaches that we can take there, and we are legally evaluating all of them to make sure that we do it as quickly as possible.

Mr. MENENDEZ. But they will give you, as I understand it, I don't know if I am calling it correctly——

Mr. PERCIASEPE. The final interim rule.

Mr. MENENDEZ [continuing]. Will give you almost automatic process for people to rely upon. Because I think everybody recognizes that the question of sludge dumping is not the question of dredging ports. And what I fail to understand is what is the great hesitancy over something that seems to be universally recognized as not one of the legitimate impediments to dredging and can cost an enormous amount of money for permittees and continues to delay the process. That seems to be the simplest of them.

Mr. PERCIASEPE. We have no hesitancy in wanting to change the rule. What I would not want to do is do something procedurally that ends up in court for over a year. You know, I don't want to cut off my nose to spite my face. But I agree with you 100 percent. There is no disagreement. The rule needs to be fixed, and we will. We are hopefully going to be able to do it extremely fast.

Mr. MENENDEZ. Well, I just hope, and I don't want to impose upon the committee any longer, the Chairman has been very gracious here. I just hope that as you work your longer-term strategies that you look at time frames, because you have none right now. You all can do it sequentially, you can take forever in your process; you really don't have time frames so that permittees—and then you call their permits stale, which is really I think the height of an offense to the community who actually has to seek the permits. You should work together so that it is not sequential.

I hope that we don't continue to have the turf wars that we have had prior to this date, and I also hope you establish standards. Because what you have here, you continually provide the regulated community with moving targets.

Let's establish standards, especially in the case of contaminated sediments. I don't know how you are going to deal with upland disposal with the recent Supreme Court decision on ashes which is going to further tax your amount of hazardous waste disposal sites. So if we are going to preserve these jobs, preserve the economic ac-

tivity and take advantage of the international trade we are all talking about, I really hope we put our nose to the grindstone on this.

I want to thank you, Mr. Chairman, for this opportunity.

Mr. BORSKI. The time of the gentleman has expired.

Dr. Zirschky, that barge traffic has run more slowly in recent years than originally estimated, less than 1 percent per year, with the GATT agreement going into effect, do you think that exports will increase enough to push this growth rate up, thus increasing the need for inland waterway infrastructure?

Dr. ZIRSCHKY. I don't have an accurate answer on the commerce part of that. But our economic analysis has shown that we do need to make some of these repairs based on our current projections of 1 to 1.5 percent. The difficulty is finding the money to do that.

Mr. BORSKI. Finding the money to do that?

Dr. ZIRSCHKY. Yes. It is my understanding that other countries to some extent subsidize not only their harbor maintenance, but their inland waterways. Our users pay for some of those costs. Problems could arise for both the harbor and the waterway users if the user fees are raised too high as they could become less competitive in a global market. It doesn't take that much on grains, for example. The margin is not that great.

If you raise the user fee, that has to get reflected in the grain price which can hurt our exports. But I do not have a detailed economic analysis. I would have to get back to you on that.

[Subsequent to the hearing, the following was received from Dr. Zirschky:]

Reductions in trade barriers, such as GATT, will stimulate the waterborne commerce of the United States both directly and indirectly. Certainly we can expect an increase in our exports or imports and some portion of the increase will be carried by water transportation for the domestic portion of the trip. The best bet for a positive impact on waterborne commerce due to trade liberalization of specific commodities is in the export of agricultural products. The United States already has a significant comparative advantage for these commodities and USDA is expecting that GATT will create roughly a 10 percent increase in grain exports. It must be noted, however, that increased access to agricultural markets may work to the advantage of agricultural industries in developing countries. GATT may mean more intense competition for U.S. agriculture.

Waterborne commerce can also be stimulated indirectly due to an overall increase in international trade which involves taking better advantage of efficiency-increasing specialization. This, in turn, results in increases in overall national production. Increases in Gross Domestic Product (GDP) always involve increases in transportation inputs.

The Council of Economic Advisors stated that the annual gain in GDP due to GATT ten years after its implementation is likely to be greater than $100 billion but less than $200 billion. If such estimates were to materialize, and if the relation between GDP and barge traffic were to remain at its 1992 level, the increase in barge traffic could be in excess of 12 million tons per year by 2005. This represents a 1.6 percent increase over the amount of traffic that could be expected without GATT.

If an increase of 12 million tons in barge traffic were to occur, there would be increased demands for vessels and infrastructure. Based on current relationships between tonnage and number of barges, the GATT related tonnage increase could require an additional 600 barges on the inland system.

Mr. BORSKI. I think it is fair to assume that the purpose of GATT would be to increase trade. Perhaps it is something you should give some thought to as to what our needs will be if that is successful and trade is dramatically increased.

You suggest in your testimony that lock delay costs could be drastically reduced if traffic controls were implemented. Could you describe in more detail how these traffic controls would work?

Dr. ZIRSCHKY. I don't have a precise answer. The problem is that I am not a mathematician who is well-schooled in queuing theory, but the barges now arrive sometimes in groups, sometimes randomly. If they were to arrive evenly spaced at 30-minute intervals, we could efficiently use the locks. If they arrive in a random spacing, the queue becomes infinite. We can't move them through the system efficiently. I don't have a precise answer on what we are doing to set up a control system to schedule the barge traffic through.

[Subsequent to the hearing, the following was received from Dr. Zirschky:]

While the Corps is not currently proposing traffic controls for the inland waterway system, we can envision working with the industry to develop such a system. Traffic control methods could be implemented by the commercial users of the inland waterway system through a self-governing procedure to reduce delays that are common at many locks. Although traffic controls would not change the physical capacity of Corps operated and maintained locks and channels, controls could benefit industry by reducing the delays incurred while tows wait for their turn to pass through the locks. The Corps would also reap benefits by increasing the efficiency of its lock operations. If through scheduling, the lock chambers could be filled with the maximum number of vessels during each cycle, more tows could transit the locks with fewer delays. This procedure would significantly increase the performance of the inland waterway system.

Another traffic control procedure that could be implemented by industry would be to allow tows that are ready-to-lock a higher priority in the que. Oversize tows cause delays to all vessels in the que while they are being broken down into small enough sections to fit into the chambers. The practice of allowing ready-to-lock tows to move ahead in the que could result in increased efficiency of the lock cycle and possibly encourage an increase in the number of ready-to-lock tow configurations that arrive at the locks.

Additionally, the Corps needs to continue to emphasize improving the scheduling of maintenance and rehabilitation at Corps navigation projects. Both scheduled and unscheduled outages can cause significant delays to traffic movement on the waterway system.

The Corps does not plan to impose any new traffic regulations or controls on waterway users without first discussing the issues with commercial waterway users and closely examining all the repercussions.

Mr. BORSKI. Mr. Perciasepe, when Congress eliminated the wastewater grants program, it also eliminated the innovative and alternative treatment assistance program. Do you think we do enough under the current SRF program to encourage the use of innovative and alternative treatment technologies, and does the need to meet accepted engineering standards discourage the use of innovative technology?

Mr. PERCIASEPE. I am not sure that it is the eligible—there is nothing ineligible about an innovative approach to solving a wastewater problem in terms of the SRF. I think what the—what we wanted to do in the grant program was encourage its development by providing a favorable grant ratio. I think up to almost 90 percent Federal funds to try something new, to reduce risks that somebody would be taking.

But what has turned out—I think the risk has turned out to be not so much the willingness to try an innovative idea, but the risk and the aversion to enforcement if it fails. And one of the things that we have proposed in our Clean Water Act proposals is that the

NPDES permit program, the permitting program under the Clean Water Act, be amended to allow compliance flexibility for innovation in meeting NPDES permit standards.

I think that rather than a financial incentive, a regulatory incentive may work just as well, both in terms of municipal as well as industrial wastewater treatment.

Mr. BORSKI. Mr. Perciasepe, later this morning a witness will propose that a Federal trust fund be established funded by user fees on gallons of water consumed to finance drinking water and wastewater infrastructure investments. What is your reaction to that proposal?

Mr. PERCIASEPE. Based on the gallons of wastewater discharged?

Mr. BORSKI. Yes, a user fee based on the amounts of water consumed.

Mr. PERCIASEPE. We have proposed, again at the administration level for both the water—Safe Drinking Water Act and the Clean Water Act, fee structures, user fees, if you will, on drinking water and NPDES permit fees based on flow or whatever to help finance and offset some of the costs of running these programs. It is not a fee designed to raise the money to pay for the infrastructure. They are two different things.

But I might add, in the drinking water arena with increased State programs that can provide technical assistance to small systems and others, that there would be a long-term capital investment efficiency made if there is more technical assistance in some communities. So we had recommended that.

We did recommend a study of a broader fee system that would be both a pollution prevention fee as well as a larger revenue generator. The question of where the revenue would go, though, would be up to Congress.

Mr. BORSKI. Mr. Perciasepe, the administration's proposed Clean Water Act would authorize a study designed to identify ways of reducing or even eliminating the use of chlorine in publicly owned treatment water and drinking water systems. Is EPA pushing to eliminate the use of chlorine?

Mr. PERCIASEPE. Under Section 307 of the Clean Water Act, there is a provision that the Administrator, in keeping with the goals of the Clean Water Act, which are to eliminate the discharges of pollution, to prohibit the discharge of certain toxic pollutants. And that exists in the current law.

What we were proposing in our recommendations to Congress is a streamlined version of the administrative procedures to come to that conclusion, and also a petition process to allow citizens and others to petition us to consider whether certain toxic pollutants should be prohibited from being discharged. So this is all related to the discharge of a pollutant.

Now, in doing that, we recognize that there is a class of pollutants that many people are interested in that are by-products of the use of chlorine, both in an industrial sense or in a disinfection sense.

And what we had proposed is a three-year study, first identifying which if any of those compounds are of concern, and then, if any of them are a concern, whether a prohibition or just a reduction of the discharge, or an elimination of the discharge should be con-

cluded or added into a broader strategy. Then we would have to go back through that existing process of looking at alternatives, looking at substitutions, looking at economic and social impacts.

So what we are really proposing is to develop a strategy, only if necessary on some subset of compounds that would come out of that process. So we were not proposing the discontinuation of the use of chlorine either as an industrial feedstock or as a disinfectant, but rather the discharges of toxic pollutants that might result from that. We wanted to look at whether or not there should be a strategy for dealing with those.

Mr. BORSKI. Let me end and ask the gentleman from Maryland if he has any questions.

Mr. GILCHREST. Thank you, Mr. Chairman.

Dr. Zirschky, you made a comment in your earlier statement about a nationwide study to understand the problems of and the cost of infrastructure related to water supply needs for the United States. I think I——

Dr. ZIRSCHKY. It is not so much on infrastructure needs as a supply availability.

Mr. GILCHREST. Supply availability. Supply availability for drinking water for the Nation?

Dr. ZIRSCHKY. For all uses, commercial, drinking water.

Mr. GILCHREST. Residential?

Dr. ZIRSCHKY. Residential, agricultural. Many parts of the country are facing extreme water shortages. For example, there is the Appalachicola, Chattahoochee, Flint River system. There are water fights between regions, and our projects seem to be at the heart of many of those water fights because we own the reservoirs and have to allocate the water. If we can get a handle on where we expect the water situation to be 10 years, 20 years, 50 years from now, maybe we can start making cost-effective investments now before we get to crisis points.

Mr. GILCHREST. Cost investment in what area?

Dr. ZIRSCHKY. Perhaps providing more storage, research to figure out how better to manage the resources that we have, such as water reuse.

Mr. GILCHREST. If I could give you an example, in my district we have Ocean City, and it is a city of about 5,000 people, but on weekends in the summer months it grows to about 300,000 people. The aquifer that provides water for the community gets dangerously low every fall, and it is my understanding replenishes itself in a timely fashion for the next tourist season or summer season.

It seems to me that Ocean City is now quickly becoming a year-round resort, where you will begin to see larger and larger numbers there in November, December, January, and so on, and there is currently beginning to get under way an infrastructure study of Ocean City.

What could your study do other than to make recommendations to that community about the availability of their water supply? How could you help that community understand the seriousness of the problem as far as drinking water is concerned, based on the increased use of it?

Dr. ZIRSCHKY. The study that I mentioned is still being scoped. It is envisioned to be more of a macro scale rather than a micro scale study. It doesn't get down to specifically Ocean City; it is more regional water availability.

We do have planning assistance to States and local governments that I could work with you on and see how we could work specifically with that community.

Mr. GILCHREST. Thank you. And in the study, maybe, Bob, you can—Bob, will EPA be involved in any way with this study?

Dr. ZIRSCHKY. We are just now scoping out who will be involved, what kinds of things we will look at, but we do intend to work with the other government agencies.

Mr. GILCHREST. We are looking at water supply for future needs, and I guess we too also have to take into consideration water quality when we are looking at water supply. So is there going to be a dimension to the study that deals with groundwater contamination, and then if you deal with groundwater contamination, is there some approach that you take to, I guess, nonpoint source pollution or cover crops for agriculture to uptake the nitrogen, things of that nature? Is groundwater water quality taken into consideration?

Dr. ZIRSCHKY. The groundwater supply, yes, was something that we had intended to look at.

Mr. GILCHREST. If you look at water supply, then don't you also automatically look at water quality of that water supply?

Dr. ZIRSCHKY. For example, I don't think we would include saline water as part of the water supply, but if you mean water quality in terms of what contaminants might be there, we hadn't planned on getting down to that level. If the water was there and could be treated to be useful for some purpose, I had intended that we would count that. But I don't think we have the resources or the data to know what the groundwater quality is in many areas of the country.

Mr. PERCIASEPE. If I just might add—and again it remains to be seen how we would work together to integrate any of this into what they are going to be looking at in sort of safe yield kinds of issues and availability—that the whole issue of fresh water for drinking water in this country is one that is extremely important, and we have to recognize that we have a finite amount of water, that it is not an increasing thing in terms of fresh water, and that it is a very tiny, tiny part of the amount of water on the earth. I mean, it is less than 1 percent, that is available for us to use for agriculture, business, and drinking.

And for some aquifers on the Eastern Shore of Maryland, there is a recharge, but for instance in El Paso, Texas, where they use groundwater there is no recharge. They are mining the groundwater. Once they used it up, they will have to do something else.

There, they are using their treated wastewater and reinjecting it back into that aquifer, you know, 4,000 feet down, and it has like a four-year travel time before it gets to where they bring it back up again. So reuse is something that is very important.

But I think in our proposals on the Safe Drinking Water Act, the Administration's proposals on that, we have recommended to the Congress that they include a source protection program, because if we have a finite amount of water, and if the population is going

to grow in the country over the next 30 years, they are going to need more water. Agriculture is going to need more water, the industrial activity is going to need more water, and the people are going to need more water. And we don't have any more water, so we don't want the water we have to get dirtier with the result that there is even less water available 30 years from now than there is now. So source protection is a very important component of what we are hoping to see in a reauthorized Safe Drinking Water Act out of the Congress this year.

Dr. ZIRSCHKY. What we are finding out is that of the 218 million acre feet of water we store, more and more of our reservoirs are being looked at to provide drinking water and minimum flows for navigation. We used to have a lot of slack. Now we don't have any slack. Every gallon of water in many places is accounted for.

Mr. GILCHREST. I guess when you do, not to be redundant, but when the Corps does its study on available water resources, they may be talking to EPA or other agencies about source protection and add the dimension of cumulative impact, which I think is a part of source protection for the whole finite water supply, as Bob so eloquently described, less than 1 percent of the available water supply on the earth that we use.

Thank you, gentlemen. Thank you, Mr. Chairman.

Mr. BORSKI. The Chair thanks the gentleman. The distinguished Chair of the full committee, Mr. Mineta.

The CHAIR. Thank you very much, Mr. Chairman.

Let me just very quickly, and I apologize for not having been here, and you might have already covered some of this. There has been some reference to this interagency working group. Has that been established now?

Mr. PERCIASEPE. On dredging?

The CHAIR. I am sorry. On the dredging.

Mr. PERCIASEPE. Yes. Under Secretary Pena, there is an interagency group looking at broad port issues as well as dredging, if that is——

The CHAIR. And how many people—well, maybe for the record, if you could submit a list of those who are on the working group.

[Subsequent to the hearing, the following was recorded from Mr. Perciasepe:]

The Interagency Working Group on the Dredging Process is chaired by the Maritime Administration from the Department of Transportation and also includes representatives from the Environmental Protection Agency; the Department of Interior's Fish and Wildlife Service; the National Marine Fisheries Service and the Office of Ocean and Coastal Resource Management from the Department of Commerce; and the Department of the Army and the U.S. Army Corps of Engineers. The Group's efforts complement other Administration initiatives, such as the White House's Interagency Working Group on Federal Wetlands Policy and the White House's Oakland Harbor Dredging Task Force.

The CHAIR. Now, what is the charge to that working group? What are they supposed to be doing?

Mr. PERCIASEPE. We have a charter, Congressman, that we have put together and I don't have it with me.

The CHAIR. All right. Maybe if you could submit that.

[The information received follows:]

INTERAGENCY WORKING GROUP ON THE DREDGING PROCESS

CHARTER

I. PURPOSE: It has become increasingly difficult for the Federal Government and for deep-draft port facility owners to proceed with essential harbor and berthing area dredging operations in a timely and cost effective way, consistent with current environmental quality controls. It also is important for Federal projects to proceed in an expeditious fashion. Difficulties and delays in proceeding with dredging and disposal arise from a number of factors, including the complex and lengthy process for obtaining all required federal and state approvals for these activities, the lack of practicable disposal alternatives, the lack of long-term coordinated disposal strategies, and the absence of any formal mechanism for developing coordinated strategies.

In an effort to further the common interest and make the process work more efficiently, this Group has been established to review the dredging and disposal process and identify ways of improving interagency coordination, information gathering, criteria review, overall sequencing of approvals, and how to facilitate effective long term management strategies for addressing dredging and disposal needs at both a national and local level. Within the context of this project, each Federal agency's mandates and constituency needs will be respected, and the intention of the Group is not to interfere with the individual agency mission and legal mandates. These efforts will complement other Administration efforts, such as the White House's Interagency Working Group on Federal Wetlands Policy and the White House's San Francisco Dredging Task Force, among others. The Group recognizes that States have a stake in the efficient operation of deep water port facilities, therefore, they have a vested interest in the dredging and disposal process.

II. MEMBERSHIP: The Group is established by the Secretary of Transportation, in cooperation with other Cabinet members and Agency heads, to provide a forum for the coordination and exchange of information among the Department of the Army, the Department of Transportation, the Environmental Protection Agency, the Department of the Interior, and the Department of Commerce. Members will include the Environmental Protection Agency (EPA), the Fish and Wildlife Service (FWS), the National Marine Fisheries Service (NMFS), the Department of the Army/Corps of Engineers (CORPS), the Office of Ocean and Coastal Resource Management (OCRM), and the Department of Transportation (DOT), acting through the Maritime Administration (MARAD). If the Secretaries so desire, such Secretary may designate other representatives. It is expected that each department will designate the appropriate agencies to represent their departmental interests.

III. OBJECTIVES AND DUTIES: The Group will review the current process for authorizing dredging and disposal, for identifying, planning for and selecting dredged material disposal alternatives, and for determining appropriate mitigation measures. Such activities will include but not be limited to analyzing the approval process and identifing ways of improving application coordination, information gathering, criteria review, overall sequencing of approvals, and use of long term management strategies. Since the authorizations, planning, permits and approvals also involve State and local agencies, this effort will be coordinated with their representatives. Other affected parties such as port authorities, public interest organizations, labor unions, and businesses will be consulted as well through an outreach program. The Group will also assess various Federal agencies' outreach programs to identify successful techniques for public input in this outreach program.

a. The Group will take a fresh look at dredging issues and consider innovative changes. The Group will focus on several areas: first, on the mechanics of how to make the existing system work better; secondly, on interagency education and dialogue regarding policies affecting the process and long term planning strategies; and third, to prepare mutually agreed-upon practical hand books, memoranda of understanding, and other appropriate tools, as may be necessary to further coordination among agencies. The Group will facilitate a dialogue for achieving a common understanding of problems and to identify solutions to them. To the extent necessary and agreed to among the parties, evaluation of existing policies or standards for agency decisions may be included.

b. A two-tier structure will implement this approach. A steering committee at the Assistant Secretary or Deputy Assistant Secretary level will set the over-all direction. A working committees will address specific issue areas. The steering committee will identify which recommendations to forward to the Secretary and other involved Cabinet members within the nine month project timeframe.

c. Case studies of several ports' planning, permitting, and authorization experiences, federal harbor dredging authorization experiences, and other relevant information will be used as a means to identify problems in the process. Case studies of existing interagency regional coordination activities will be prepared to provide framework models to be evaluated for national application.

d. Consistent with the scope of its purpose described in Paragraph I, the Group is authorized to:

i.) Identify and, as practicable, recommend measures to implement a system of efficient agency review, taking into account the needs of commerce and national security, protection of the environment, and existing legal mandates. The Group is to review the process

and identify ways of improving application coordination, information gathering, criteria review, overall sequencing of approvals, and long term planning processes.

ii.) Undertake such information gathering activities as necessary to define issues for consideration by the Group, develop positions on those issues, and communicate the Group's position thereon to the Secretary of Transportation and the other involved Cabinet members and Agency heads.

iii.) Evaluate economic, technological, and institutional developments relating to the dredging process and communicate recommendations on promising new ideas and approaches for Federal policies and programs.

iv.) Evaluate and identify improved methods and processes for development of disposal alternatives.

IV. SPONSOR: MARAD shall be the Group sponsor and shall furnish support services for the operation of the Group.

V. APPOINTMENTS: Each Group member shall be appointed by the Secretary or the appropriate Cabinet member or Agency head for a nine month period. The MARAD Deputy Administrator shall be the chairperson of the steering committee. The steering committee shall appoint the chairperson(s) for the working committee. The Committee Management Officer shall be the Director, Office of Ports and Intermodal Development, or his designee.

a. Members may be represented at steering committee and working committee meetings and activities by alternates representing the same interest as the member. Alternates shall have full rights and duties of membership. Appointment of an alternate shall be made by the member and communicated to the sponsor, at any time prior to the meeting or activity for which the appointment is made. Unless otherwise specified by the member, the appointment to the steering committee is valid for only one meeting or activity including any continuation of that meeting or activity.

VI. SUPPORT SERVICES: The Center for the Study of Marine Policy of the University of Delaware shall be a consultant.

VII. MEETINGS: The chairperson shall call steering committee meetings as needed. The chairpersons of the working committee shall call working committee meetings as needed. Detailed minutes of each meeting shall be kept and, prior to the next meeting, shall be distributed to each member. Minutes shall be approved at each meeting.

VIII. TRAVEL AND EXPENSES: Each agency is responsible for its own travel and expenses.

IX. ESTIMATED COST AND SUPPORT: The estimated annual direct operating cost of the Group is $50,000.

X. PUBLIC INTEREST: As a component of the Administration's effort to better coordinate the dredging process, the formation and operation of the Group is determined to be in the public interest.

XI. REPORT TO THE SECRETARY: Within nine months following the formation of the Group, the chairperson shall submit to the Secretary a report describing the Group's membership, activities, and accomplishments during its term. In addition, the chairperson shall provide the Secretary with interim reports during the calendar year as requested.

XII. EFFECTIVE DATE: This charter is effective as of October 28, 1993, and will terminate one year after this date unless prior to that time the charter is extended.

Dr. ZIRSCHKY. It is to identify and resolve issues related to dredging and we will have an options paper, at least I think the Maritime Administration is currently planning to get an options paper out soon, perhaps as early as next week.

The CHAIR. Now, that is an options paper, and what will the purpose of that be? Will that outline some direction in the future as it relates to something like, let's say, what Mr. Menendez brings up about the port where they have 28 agencies that have been told to resubmit their applications?

I mean, to me, it doesn't seem right to have this kind of interminable delay or nonaction, and it seems to me if we are dealing with trade issues, there is no reason why ships ought to be going to Nova Scotia when they ought to be able to come into the Port of New York or other places. And all we are doing is losing.

Now, is there a time line in which some direction has been given to this interagency working group as to what and when they are to come forward with recommendations? And what is this thing you just mentioned about this interim report they will be coming up with in a couple of weeks?

Dr. ZIRSCHKY. I believe they are tentatively set to release a draft options paper next week. They will begin working with the ports, I believe across the country, by having public meetings and discussing what we can do to resolve some of the issues.

I think I received the draft report late yesterday and I have not read it yet.

The CHAIR. Any kind of legislative action that takes place, is that under the Clean Water Act, is that under, I don't know, ocean dumping? What other acts are there, Mr. Menendez, that have some—that touch on this whole area?

Dr. ZIRSCHKY. The Water Resources Development Act of 1994 could be one potential means to work on some of these issues.

As I mentioned earlier, we are trying to resolve some views related to cost sharing of confined disposal facilities. If we are able to do that, that might be one element that we could put into our 1994 bill.

The CHAIR. Whatever those recommendations are, would they relate to the WRDA and would you be able to come up with anything firm within, let's say, the next month or so?

Dr. ZIRSCHKY. The next month is probably too optimistic. I would hope within the next two or three months we can resolve some of these issues.

The CHAIR. We are taking some swift action and I don't know how long that swift action is going to take. But you know, the WRDA is something that is going to happen; Clean Water Act, I am not so sure about.

I would like to raise the flag on it, Bob. But those two are very important pieces of legislation that our committee still has to act on, and so I would like to get some recommendations from you that we might be able to deal with under the WRDA.

But I guess the problem that I feel that plagues us, whether it is Clean Water Act or WRDA or ocean dumping or any of these other acts, I am wondering whether the technology of detection is outstripping our ability to either treat on the clean water side, or becomes a prohibitor of getting things done, and is there a way to

be able to resolve the differences between the impact on the environment—you see, I don't know what the relevancy is of our ability to detect one part per quadrillion of something and its relationship to health and safety.

And I am just wondering whether or not—and I come from the Silicon Valley, where it is our machines that are so sophisticated; they are being built now so that they can detect one part per billion.

I remember when I was mayor, it was maybe one part per million, and that became the standard. As the machines got better, it got to be one part per 100 million, and that became the standard, or whatever. And then as it became one part per billion, that became the standard. The standard has been driven by the technology to detect and I sometimes wonder whether or not we are being driven by that too much. Mr. Perciasepe?

Mr. PERCIASEPE. Well, talking about the level of detection just for a moment, obviously there has been an advance in science and in our ability to detect. But I think a counterbalance to that, Mr. Chairman, is that we continue to see certain substances throughout the environment, not just testing of sediment or testing in the water column or testing in the area.

When we test you, we will find dioxin in your body at levels well above the level of detection. And the question is, how does it get there? And it gets there from many different places. Not sediment necessarily or air or water, but some combination of those. And that is what we are trying to get a grip on.

And I think that having that level of detection, I think along with it has to come a responsible plan of action, not just for sediments, but what do we want to do to manage certain substances in the environment across the board in a multimedia way, rather than only concentrating on one or the other on any particular—at any particular time.

If sediment, for instance, is a source—I am not about to say that it is—but the way it would happen would be that small organisms living in the sediment would have it in their bodies, larger organism would eat those, and eventually some organism that you and I eat, some animal that you and I eat has it in it and it stays in us because we are at the top of the food chain. Not just something as exotic perhaps as dioxin but something as simple and elemental as mercury.

We are finding more and more mercury in virtually all of the fresh water fish in the United States. Almost every fresh water body is going to have some mercury in it, and the issue is not even related to the fact that the level of detection is getting lower. All that that is doing is giving us better detective work to find out where these substances that are accumulating up toward us are coming from. What has to come with that is a responsible plan of action that looks at what is the most cost-effective way to deal with this whole problem, not to try to deal with it in each instance.

So I am not giving you a perfect answer, but I think that the level of detection shouldn't only be looked at as something that drives a standard, but also as a new detective tool so that we can find out where things are and have appropriate responses. That, I think, is where the key congressional and executive interaction

ought to be and what should be the response to our new ability to be detectives.

The CHAIR. And to the extent that it improves our ability to be a detective, and let's say an agency is required to have a permit to do something, it seems to me that sometimes that becomes then the reason for not granting a permit.

Mr. PERCIASEPE. Right. And I think besides the responsible action in a plan is the fact that I don't think anybody—and I can say this fairly categorically wants to see—any detection of a substance be the issue that would stop the economic viability of a port.

What it ought to be doing from a detective mode is telling us we have to find a different way to manage a particular situation, and where we need to redouble our efforts. Besides making interim decisions that will get us through some transition period, we need to come to consensus as quickly as possible on what our long-term strategy would be for dealing with some of these substances so that, in an environmentally-appropriate manner, the necessary work can take place in the time that it is supposed to take place, rather than allowing the lack of an idea of what to do as a solution to be the excuse to do nothing.

The CHAIR. And whose responsibility is that? Is that the permittee or the permitter?

Mr. PERCIASEPE. I think that it is the responsibility of the full array of stakeholders that are involved in our ports, if we are talking about ports. It has got to be—the Federal Government has to create the environment to allow the solutions to emerge.

The CHAIR. Right now I get the sense that it is sort of——

Mr. PERCIASEPE. This is the thing that we are trying to eliminate in this approach to life. We must all get together and come up with a proper short-term and long-term plan. I don't want to say just the long term, because that is an easy thing and we can do a long-term plan for a long time. But if we have a direction we are going in, it will make it much easier in that context to make the short-term transitional decisions.

The CHAIR. Well, I hope that we will get to that, and I would like to offer the resources of our committee to make sure that we bring this thing to a head, because I think it has been sort of dragging out, dragging out.

There are many examples like Mr. Menendez brings to us across the country. The Port of Oakland is facing the same thing. There are other ports that I know are facing the same thing, and I really think that as it relates to port activity, I just hope that we are able to bring this to a head so that we might be able to deal with it legislatively, and it has to be done legislatively.

Well, thank you very, very much, and I look forward to continuing to work with you, and I yield back the balance of my five minutes.

Mr. BORSKI. Thank you. The gentleman from Oklahoma, the distinguished Ranking Member, Mr. Inhofe.

Mr. INHOFE. Thank you, Mr. Chairman.

Mr. Zirschky, I didn't bring my notes here, so I will go from memory, because I didn't know I would have this opportunity. I would like to have you address and bring us up-to-date on the most critical infrastructure need of our navigation way, that being the

Montgomery Lock and Dam project on the McClellan-Kerr navigation system.

As background for the rest of my colleagues here, the McClellan-Kerr system navigation way that reaches Tulsa, Oklahoma, which is my district and is the most inland of all ports. At the time that the McClellan-Kerr navigation way was built, Montgomery Point Lock and Dam was a part of the project.

I know that there is a lot of interest, but we also know that we have had a tremendous deterioration in our contracts of our haulers from my area because of the lack of reliability of having that depth that is necessary.

Do you have any update for us on that?

Dr. ZIRSCHKY. No, sir. I would be happy to get back with you later this afternoon on what the latest status is, but I am afraid I am not familiar with that specific case.

Mr. INHOFE. This is a project that has never been off the drawing board. A study done in 1991 supported construction of the lock and dam at Montgomery Point.

But all the time each year that goes by, it is costing us.

Yes, I would like to get an update on that, if I could.

[The information received follows:]

CECW-AL 05 May 1994

INFORMATION PAPER

SUBJECT: Status of Activities for Construction of Montgomery Point Lock and Dam Project

1. Purpose. The purpose of this paper is to provide information on the status of activities related to preparation for construction of Montgomery Point Lock and Dam on the McClellan-Kerr Waterway.

2. Background. The White River Entrance Channel consists of the first 10 miles of the McClellan-Kerr Arkansas River Navigation Project. This is the only reach in the system where the stage is not controlled by a downstream dam but by stages on the Mississippi River. Changes in the Mississippi River over the years have resulted in low water problems in the White River Entrance Channel. A feasibility report has been approved recommending the new lock and dam with bottom operated gates. The lock chamber will be 600 feet by 110 feet with miter gates. This matches the existing lock chamber sizes of the McClellan-Kerr system. The navigation pass over the dam (gates down) will be used approximately 82 percent of the time for present conditions and 73 percent of the time for future conditions. A Limited Reevaluation Report to verify the economics of the project has been approved.

3. Current Status. The project is eligible for consideration for construction funding. Existing authorization permits the Appropriations Committee to include a provision in law that allows the Corps to withdraw funds from the Inland Waterway Trust Fund to cover 50 percent of the construction costs. Further, ASA(CW) stated (enclosure) that land acquisition can proceed with previously appropriated funds after necessary real estate documentation is complete. The Southwestern Division is currently completing review of the Design Memorandum for Real Estate. Actual land acquisition is scheduled to begin in 1995. Other Planning, Engineering and Design (PED) activities underway include the Feature Design Memorandum for Materials; the Feature Design Memorandum for the Lock and Dam; and, Plans and Specifications for Access Facilities.

The ASA(CW) directed an engineering review of the completed study for Montgomery Point L&D to identify new engineering technology and methods for construction of navigation projects whose application could result in substantial savings while meeting the objective of efficient and safe lockage. That review is currently at the division office and should soon be forwarded to headquarters.

The President's budget request for FY 1995 includes the remaining funds required to complete PED activities.

Campbell/272-0117

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108

REPLY TO
ATTENTION OF

04 FEB 1994

Honorable David Pryor
United States Senate
Washington, D. C. 20510

Dear Senator Pryor:

Thank you for your letter of December 14, 1993, co-signed by the Senators of Oklahoma and Arkansas, concerning the Montgomery Point Lock and Dam project. We are keenly aware of the great interest that this project has for the users of the McClellan-Kerr waterway.

The Department of the Army has completed review of the Limited Reevaluation Report of the Montgomery Point Lock and Dam project. The conclusion reached is that, along with other new start candidates, this project is eligible for consideration for construction funding in the budget, with the understanding that 50 percent of the cost of construction would be derived from the Inland Waterways Trust Fund.

The Little Rock Army Engineer District is preparing the necessary documentation for land acquisition for the project. I have directed the Corps to proceed with the acquisition using funds previously appropriated once the documentation is complete. The acquisition is forecast to begin in early 1995. I have further directed the Corps to conduct an engineering review of the Montgomery Point Lock and Dam project applying the recently completed study effort to identify new engineering technology methods for construction of navigation projects, with an aim toward obtaining substantial cost savings while still meeting the basic objective of efficient and safe lockage.

Identical letters are being sent to Senators Nickles, Boren, and Bumpers.

Sincerely,

G. Edward Dickey
Acting Assistant Secretary of the Army
(Civil Works)

Mr. INHOFE. Another closer related subject.

In 1987 and 1988, I think it was, we started a program to try to promote the use of the navigation way for military purposes. There are only two of us in Congress, who are on both the Public Works and Transportation and the Armed Services Committees, and that is Pete Geren and myself. We have been working on trying to promote the use, particularly as to transporting the various guard units around.

You were talking about cost-effectiveness a moment ago, and this has proven to be the most cost-effective way to do that.

We had gone to the military transportation command and talked to them and everyone is in agreement with it, but nothing seems to be done. Granted, this is not directly relating to the subject matter of this inquiry today, but is there any way that you can suggest more support from the Corps in helping us to promote this form of transportation?

Dr. ZIRSCHKY. I will have to check with the military side of the Corps on that. Anything related to military transportation, military supplies, military equipment comes under a different Assistant Secretary. My responsibility is strictly civil works.

[Subsequent to the hearing, the following was received from Dr. Zirschky:]

INFORMATION PAPER

CECW-OE-P
5 May 94

SUBJECT: US Army Corps of Engineer Support to the Military Use of the Intracoastal and Inland Waterway System (IWS)

1. Purpose. To provide information on the Corps support to the military's use of the intracoastal and inland waterway system.

2. Facts.

a. The intracoastal and inland waterway system consists of over 12,000 miles of 9 foot(+) channels and 168 lock sites. This system provides the operational setting for approximately 3200 commercial towboats and 27,000 barges.

b. USACE has responsibility to operate and maintain this waterway system. Maintenance operations include channel dredging and general maintenance of the locks. One of USACE's most direct impacts on operations is the setting of movement priorities through locks. Vessels belonging to, or contracted to, the United States Government are given movement priority.

c. Since WWII, the DoD has used the IWS for bulk petroleum transportation. In 1986, the broader capability of the system was "re-discovered" when the Oklahoma National Guard asked the Tulsa Engineer District to assist them in a "test" movement of six items of heavy equipment from Camp Gruber, OK to Ft. Chaffee, AR.

d. There have been 18 significant movements of military equipment on the IWS since the 1986 test move. Units involved in these movements include the Oklahoma and Arkansas National Guard and units from the 101st Airborne (Air Assault) from Ft. Campbell, KY. The largest move to-date commenced on 29 April 1994 at Ft. Campbell, KY with 1500 pieces of equipment belonging to the 101st Airborne loaded on 66 barges enroute to Ft. Polk, LA.

e. The Military Traffic Management Command (MTMC) has responsibility for transportation of military forces and equipment, worldwide. MTMC's selection of the mode of transportation used to support military movement is dependent upon a variety of operational, functional, and economic factors.

LTC NASH/(202) 272-0453

US Army Corps of Engineers

Situation Report

CECW-OD

OPERATIONS

Subject Major Military Move - Inland Waterways

Date: 22 APR 94

1. On 28 - 29 APR 94 an entire Brigade Task Force of the 101st Airborne at Fort Campbell, KY, will load onto 66 deck barges at Old Lock "C" on the Cumberland River for the trip to Fort Polk, LA. They will depart no later than 30 APR. They will offload at Alexandria, LA, not later than 9 MAY.

2. The downriver trip is anticipated to take 7 - 10 days, depending on river conditions. They are scheduled to load for the return trip 2 - 3 JUN and depart no later than 4 JUN. The return trip upriver is anticipated to take 14 days.

3. Use of barges on the inland waterway system is anticipated to save $400,000 over rail, the next least costly mode. This cost does not include the additional truck loading and unloading costs and time that are required for a rail move. When loading and unloading times are included, the overall times for the moves are comparable.

4. This exercise will be the largest military move, to date, using the inland waterway system.

ARTHUR K. HURKE
28845

Can be hand written.

Mr. INHOFE. If you would follow up on the Montgomery Point Lock and Dam I would appreciate it very much. Thank you.

Mr. BORSKI. Does the gentleman from New Jersey have further questions?

Mr. MENENDEZ. One brief one.

Mr. BORSKI. Yes, sir.

Mr. MENENDEZ. Thank you, Mr. Chairman.

You said in your explanation to me of where we are going on the question of retesting that there would be a draft in the next two weeks, and one of the things it would do is not make the testing mandatory, but optional.

My question would be for whom is it optional for the Regional Administrator, for the applicant?

Mr. PERCIASEPE. Right now the regional offices have been interpreting it that everyone had to retest. So there would be certain conditions, if conditions changed out in the world—and I don't want to argue about whether anything should ever last three years and get into this situation, but putting that aside for a moment—if over a period of time there is enough change in the area where the work would be done, then the Regional Administrator could ask for a retesting.

But there would be no mandatory duty that it would have to be done. Right now it is being interpreted that regardless of whether there has been a change or not, they would have to redo it. I do believe that that was the intent of our action plan that we put out in April.

Mr. MENENDEZ. What would be the—are there some guidelines for Regional Administrators?

Mr. PERCIASEPE. That is what we are trying to put together now.

Mr. MENENDEZ. Because we could be back at square one when it is all over, so you are going to attempt to create guidelines as to what you consider conditions have changed?

Mr. PERCIASEPE. Yes.

Mr. MENENDEZ. Last question. I appreciate the Chairman of the full committee's questioning. Let me ask you this: With reference to the draft option, the paper you say will be out in a week, are those just on administrative—internal administrative possible changes or are those going to suggest legislative changes or a combination, or what?

Mr. PERCIASEPE. I think both our offices just got the draft of that that we are going to look at probably in the next several days. But those options grow from concerns that were heard from public meetings that were held through the winter around the country at different port locations. These were synthesized, and then options for addressing each one were laid out. I believe some of those options include legislative changes.

For instance, there is some discussion on where should the Federal impetus be for this long-term planning. Should it be at EPA, should it be in the Army, should it be under the Coastal Zone Management Program.

These kinds of things are options that we heard when we were out there and these are laid out.

If it is obviously going to be different than it is now, there may be a requirement for legislation. So I do believe there are some leg-

islative options in some of the categories of areas. But I would think there are also a lot of administrative changes as well.

Mr. MENENDEZ. Thank you, Mr. Chairman.

Mr. BORSKI. Thanks to the gentleman.

The gentleman from Illinois, Mr. Poshard.

Mr. POSHARD. Thank you, Mr. Chairman. I don't have any questions for Mr. Zirschky. I would like to request a time that we could sit down together, though, and particularly address some needs in my district with respect to the Army Corps of Engineers project at Olmsted, Illinois on the lock and dam situation there.

It is about a $1 billion project, and I have considerable concerns about the way that project is being carried out, and I have spoken to the Chairman of our committee here about some necessary things we would hope to get answers on in due course of time, but I think that I would rather do that on a one-to-one basis as opposed to in the committee hearing Mr. Chairman, right now, so if you could contact my office and we could get together, I would very much appreciate that.

Dr. ZIRSCHKY. Certainly.

Mr. POSHARD. Thank you.

Mr. BORSKI. The Chair thanks the gentleman and please keep us informed as to the outcome of that meeting. I know it is a very serious matter. The gentleman has discussed it with us on several occasions, and we wish him well in the outcome.

Mr. POSHARD. Thank you, Mr. Chairman.

Mr. BORSKI. Any further questions? If not, we could probably go on with several more hours with more questions, but I am at this point going to thank you for coming and ask you to respond to a few further questions we have in writing so that we can move this hearing along a little bit.

Thank you very much, gentlemen.

[Subsequent to the hearing, the following was received from Dr. Zirschky and Mr. Perciasepe:]

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight.
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 1: In your testimony you said that our ports are positioned to be competitive into the next century. How many of our deep draft ports have depths of 40 feet or more, and how many are still waiting for channel improvements?

ANSWER: We currently have at least 32 deep draft ports or port complexes with controlling depths of 40 feet or more. There are more if you count individual ports within port complexes such as New York and New Jersey Harbor, Hampton Roads or the Delaware River. Of these ports/port complexes, nine (9) are on the Atlantic coast, eleven (11) are on the Gulf Coast and twelve (12) are on the Pacific coast, including Alaska and Hawaii. A list is attached (ATCH 1).

There are currently 19 ports or port complexes with deepening projects planned or underway that would increase harbor depth to 40 or more feet, including additional work at some ports which have 40 feet at present. Not all of these are currently federally funded. Some projects are being constructed by the ports and studies are underway to determine the level of reimbursement for the Federal portion of the project. Also, some planned projects are early in the study process with no authorization as yet. These projects include seven (7) sites on the Atlantic, six (6) sites on the Gulf and six (6) sites on the Pacific. A list is attached (ATCH 2).

Ports Currently With 40 Feet or More Depth
(ATCH 1)

1. Portland, ME
2. New York and New Jersey
3. Philadelphia, PA/Lower Delaware River
4. Baltimore, MD
5. Hampton Roads, VA (Norfolk, Newport News)
6. Morehead City, NC
7. Charleston, SC
8. Savannah, GA
9. Port Everglades, FL
10. Tampa, FL
11. Mobile, AL
12. New Orleans/Baton Rouge, LA
13. Lake Charles, LA
14. Beaumont, TX
15. Port Arthur, TX
16. Houston, TX
17. Texas City, TX
18. Galveston, TX
19. Freeport, TX
20. Corpus Christi, TX
21. San Diego, CA
22. Long Beach, CA
23. Los Angeles, CA
24. San Francisco, CA
25. Portland, OR
26. Astoria, OR
27. Kalama, WA
28. Seattle, WA
29. Vancouver, WA
30. Longview, WA
31. Valdez, AK
32. Honolulu, HI

Ports with Deepening Projects Planned or Underway for 40 or More Feet

(ATCH 2)

PORT	STATUS
1. Boston, MA	40' authorized, environmental analysis underway
2. NY/NJ Channels (Kill Van Kull/Newark Bay)	40' authorized, nearing completion
3. Philadelphia to Sea	45' authorized, project in PED
4. Norfolk, VA - South Branch Elizabeth River	45' authorized, project in PED
5. Jacksonville, FL	Not authorized, study underway for 42'
6. Miami, FL	42' authorized, project underway
7. Pascagoula, MS	42' authorized, 38' project underway
8. Lower Mississippi: Baton Rouge, LA to Mouth	55' authorized, study for incremental deepening underway
9. Orange, TX	Not authorized, study underway for 40'
10. Houston, TX	40' authorized, study for deepening to 45'-50' underway
11. Brazos Island, TX	42' authorized, project underway
12. Long Beach, CA	70' authorized, Port Authority doing deepening
13. Los Angeles, CA	81' entrance channel authorized, Federal incremental deepening underway
14. Oakland, CA	42' authorized, environmental issues resolved, project to begin soon
15. Richmond, CA	41' authorized, restudy underway
16. Lower Columbia River, (5 ports)	Not authorized, study underway for 43'
17. Tacoma, WA	40' authorized, study to deepen to 43' underway
18. Freeport, TX	45' authorized, study of widening underway
19. Texas City, TX	50' authorized

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 2: The Corps projects a significant increase in port construction spending beginning in fiscal year 1996. Why will there be such a large increase?

ANSWER: A number of authorized projects are currently programmed for construction funds beginning in fiscal year 1996, including Oakland, CA; Savannah, GA; Wilmington, NC; Boston, MA; Victoria, TX; Coos Bay, OR; and Los Angeles, CA. In addition, fiscal year 1996 is the heaviest funding year programmed for several projects already underway, including Port Jersey Channel, Grays Harbor and Miami.

Follow-up Questions for the Record
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House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 3: Will the Federal Interagency Working Group on Dredging Issues ultimately propose specific actions, including regulatory changes, interagency agreements, and guidance letters, that will expedite the dredging process? Will legislative changes in the Clean Water Act or other Federal laws be necessary?

ANSWER: The Working Group has not completed the formulation of their recommendations; however, options being considered include some actions that would require legislative changes.

Follow-up Questions for the Record
for Dr. John H. Zirschky
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House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 4: The Administration has made proposals to improve Section 404 permitting. Can permits for routine dredging maintenance that benefits commercial navigation be given priority to avoid unnecessary delays or interference with waterborne commerce?

ANSWER: Evaluation of routine maintenance dredging projects should not be given any higher priority than other permit applications under Corps review. However, the Corps recognizes that certain situations warrant a more expedited review, whether it pertains to dredging or development projects, where legitimate time constraints or deadlines are imminent.

We believe a case-by-case priority is appropriate rather than a priority review of a particular class of applications (routine maintenance dredging) at the expense of delaying evaluation of other permit applications that may be equally important. The Corps is currently proposing rule making that would set a more realistic evaluation time for standard permit applications.

Delays are often avoided when the applicant seeks advance interagency input on required testing, sampling design and available and potential disposal alternatives. Pre-application coordination is encouraged by the Corps of Engineers and other Federal agencies.

Another solution may include the development of a regional general permit by the Corps for routine maintenance dredging projects. Several Corps districts have utilized this approach with some success. A regional general permit would allow for minimal review prior to verifying the project under the permit. It is important to note, however, that many dredged material disposal permit approvals are timely and avoid unnecessary delays or interference with waterborne commerce.

Finally, in an "emergency" situation the Corps can approve special processing procedures for a permit application. This occurs when an unacceptable hazard to life, a significant loss to property, or an immediate, unforeseen and significant economic hardship would result if corrective action is not taken within a time period that is less than the normal time needed to evaluate a permit application under standard procedures.

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight.
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 5: The Subcommittee received testimony that the cost of testing associated with ocean disposal of dredge material can exceed the cost of dredging. Please provide the Subcommittee with an estimate of the costs associated with a typical dredging permit. What is the cost to test for PCBs, dioxin, heavy metals, and other contaminants that may be found in dredged material?

ANSWER: EPA provided information on the range of costs for specific tests. We concur with EPA's estimates.

We do not have specific data available from existing records to identify total project testing costs. We will conduct statistical sampling of Corps dredging projects to compare the volume and cost of dredging with the cost of testing. That information should be available by October 31, 1994.

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 6: Federally approved state water quality standards and coastal zone management plans may impose more stringent requirements on dredging projects than Federal criteria do. Yet, Federal investment in dredging and navigation projects is justified because of "national" economic and transportation benefits. Shouldn't the Federal Government share in the cost of meeting federally approved state environmental standards, rather than having local project sponsors assume the additional costs?

ANSWER: The Corps of Engineers has a responsibility to insure that its new construction and operation and maintenance dredging and dredged material disposal is in compliance with all Federal environmental laws and regulations, including state standards that are established in accordance with Federal environmental law. However, at issue, are State requirements that are not directly related to avoiding environmental impacts of the dredging or dredged material disposal. For example, a state Coastal Zone Management Plan may require that all clean dredged material be placed on beaches to benefit recreation use and provide for protection from storm damages. Where such requirements impose additional costs, the Corps does not believe it is appropriate to utilize funds that are budgeted and appropriated for a navigation purpose to accomplish other State objectives. The Corps position is that the incremental costs in these cases should be either borne by the states or shared with the Corps under existing authorities for beneficial use. The Corps has authorities to cost share in beneficial uses of dredged material for placement on beaches and for protection, restoration and creation of aquatic habitat and wetlands.

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 7: What are the economic consequences of failing to rehabilitate and replace locks and dams that the Corps identified as needing rehabilitation and replacement?

ANSWER: The Corps of Engineers has not analyzed the specific economic consequences of failing to maintain the inland waterway system in good operating condition. Analyses of the benefits of replacing or rehabilitating the 40 most congested locks, without increasing their capacity, indicate annual benefits of about $3 billion as compared with using the next most cost effective transportation, either rail or highway, depending upon location. This can be seen as the minimum potential impact. The actual impact could be expected to be much greater if the entire system were abandoned.

Another critical feature of the inland waterway system is the strong environmental advantages over alternative methods of shipment. For example, one study by the Minnesota Department of Transportation showed barge transportation to be ten times more fuel efficient and emit eight times less air pollution than highway transportation. Advantages over rail transportation in these areas were about three times.

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 8: Will the Administration recommend raising the Inland Waterways Fuel Tax in the fiscal year 1996 budget?

ANSWER: We are not aware of any plans to recommend raising the Inland Waterways Fuel Tax at this time.

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 9: The Interagency Flood Plain Management Review Committee recently issued a draft report on flood plain management issues prompted by the flood of 1993. What steps did the Committee take to provide for public comment on the report's recommendations so that navigation and other economic development concerns could be adequately addressed? What specific provisions were made for consultation with interested parties?

ANSWER: First, it should be noted that the Interagency Flood Plain Management Review Committee is not directed by the Army Corps of Engineers. Nevertheless, Army is represented on the Committee and as a member, we note that there were extensive efforts to involve the public. The Committee met with state and local officials in all of the states affected by the flooding, visiting over 60 locations. In addition, numerous contacts were made with Federal agencies, interest groups, Members of Congress and their staffs and private citizens. Over 650 copies of the draft report were circulated to these contacts for review and comment. If further information is needed regarding Committee operations, we would be pleased to work with you and the Committee to provide a response.

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994

"The Nation's Infrastructure Needs"

Question 10: The delays encountered by U.S. ports in obtaining the necessary permits to perform maintenance dredging can have an adverse economic impact on port operations and U.S. trade. Have dredging delays at U.S. ports caused the diversion of cargo to ports in Canada and Mexico? If so, how much cargo is being diverted and what is the estimated value of this cargo?

ANSWER: No definitive data are available to respond to these questions.

Follow-up Questions for the Record
for Dr. John H. Zirschky
Acting Assistant Secretary of the Army, Civil Works

House Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight
Hearing on May 4, 1994
(Representative Menendez's Questions)

"The Nation's Infrastructure Needs"

Question VI: What is the position of the agencies regarding the use of the Harbor Maintenance Trust Fund for the development of disposal sites?

ANSWER: The Harbor Maintenance Trust Fund was established to fund eligible operations and maintenance costs assigned to commercial navigation of all harbors and inland harbors within the United States. In accordance with section 214 of the Water Resources Development Act of 1986, "eligible operation and maintenance" means all operation, repair, and rehabilitation, including maintenance dredging necessary to maintain the width and nominal depth of any harbor or inland harbor. To date, "eligible operation and maintenance" has not included providing any lands, easements, rights-of-way, or dredged material disposal areas, or performing relocations required for project operations and maintenance unless certain disposal site responsibilities are assigned in law to the Army Corps of Engineers by the project authorization. The Administration is reviewing the uses of the Harbor Maintenance Trust Fund to determine whether any changes are appropriate.

RESPONSES TO POST HEARING QUESTIONS FROM MR. PERCIASEPE

QUESTIONS FROM REPRESENTATIVE BORSKI
FOLLOWING THE MAY 4, 1994 HEARING
ON WASTE WATER AND DRINKING WATER INFRASTRUCTURE
BEFORE THE SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
HOUSE PUBLIC WORKS COMMITTEE

QUESTION #1

What is the gap between our nation's wastewater needs and the current Federal spending to meet those needs?

ANSWER

As mentioned in the testimony of May 4, 1994, we believe, according to estimates from the Census Bureau, that current capital spending (local, State and Federal) on wastewater infrastructure is approximately $10.0 billion per year. The 1992 Needs Survey reports total needs of $137.1 billion, of which total needs for construction of wastewater treatment plants and other eligibilities (categories I-V) is $127 billion. The Needs Survey contains neither an annual estimate of needs, nor projections of future needs. It is our perception that wastewater capital needs are higher than current spending; however, at present, we have no methodology to accurately portray annual needs. We are currently studying this question and working on ways of estimating needs on an annual basis.

QUESTION #2

Is it more cost effective to control water pollutants from all sources, rather than try to control water pollution from only permitted source discharges?

ANSWER

Yes. Experience has shown us that, as pollution controls become more restrictive, in virtually every medium (air, water, waste), additional increments of pollution reduction become increasingly expensive. In moving into the watershed approach, the Agency hopes to encourage States and localities to target the sources of pollution which may be most cost effectively addressed first.

QUESTION #3

Would improved watershed management and nonpoint source controls reduce the need for capital improvements to meet water quality standards?

ANSWER

If the pollutant(s) affecting a particular watershed are common to both point and nonpoint sources, it may be more cost effective to implement best management practices to control nonpoint sources than to install additional control technology at a POTW. Of course, selection of appropriate controls depends on the nature of the watershed, the extent of point source controls already in place, the extent or lack of nonpoint source controls, the nature of the pollutants targeted, and other variables. In addition, improved watershed management and nonpoint source control would reduce the level of cleanup required by drinking water facilities to ensure safe drinking water and would allow for less frequent contaminant monitoring.

These are the kinds of problems watershed management seeks to solve. EPA's point and nonpoint source programs are working aggressively with the States to build the capacity to analyze such situations by utilizing the best scientific information available and then selecting the most appropriate and cost effective solutions possible.

QUESTION #4

What is the best way to use Federal funds to help small communities meet their wastewater and drinking water supply needs?

ANSWER

We have found that small and disadvantaged communities often need several kinds of help. Typically, small communities lack the institutional capability to enter the financial markets and/or often cannot afford additional debt. Thus, alternative financing arrangements, such as bond banks or credit pools, can be very useful to small communities. Any approach that would allow small communities access to financing at reduced rates would be beneficial. Further, technical assistance programs such as circuit riders, operator training, and compliance maintenance efforts are also extremely useful for small communities to ensure that infrastructure is designed and operating properly.

To help small communities meet drinking water requirements, Federal funds should be directed toward assisting small water systems (including those owned by local governments, as well as those privately owned) in achieving sustainable compliance with SDWA requirements. Federal funds should be directed to viable water systems or systems which can be made viable through the Federal assistance. Federal funds should not be used to "prop up" fundamentally non-viable systems.

An important use of Federal funds can be to provide incentives for viable water systems to assume ownership of non-viable, non-compliant systems (e.g., paying for a line to connect the systems). Without Federal financial assistance,

these troubled systems would not be attractive candidates for takeover by a viable system.

The Clinton Administration has made a series of recommendations to improve the CW-SRF program to increase its capability to serve small communities, through subsidized interest rates, extended repayment terms and other innovations. Further, the Administration's proposal for the new DW-SRF contains similar provisions. The Clinton Administration has also made a series of recommendations for reauthorizing the SDWA that would ensure greater small system compliance. These recommendations include: consolidation of small systems, small system best available technology, and increased monitoring flexibility.

QUESTION #5

In your testimony, you said $6.5 billion would be required to meet a "large part" of the annual capital needs for drinking water infrastructure. We have seen estimates of $9 - $12 billion as the total annual requirement for drinking water infrastructure. Does this estimate seem reasonable to you?

ANSWER

In the testimony of May 4, 1994, Mr. Perciasepe testified that current and proposed future spending would total approximately $6.5 billion annually. This figure included estimates of local and State spending, as well as existing spending from Federal agencies and the proposed DW-SRF.

Mr. Perciasepe also indicated that no comprehensive needs survey for drinking water had been conducted, as of yet, although the Agency is preparing to conduct such a study. It is our perception that drinking water capital needs are higher than current spending; however, we have no good estimate yet to quantify the need. When the Drinking Water Needs Survey is completed, we should have a better sense of the twenty-year costs and, perhaps, the annual need as well.

QUESTION #6

Describe EPA's role and responsibility concerning the review and approval of dredging projects. Does EPA have adequate authority to review dredging permits issued by the Corps of Engineers under Section 103 of the Ocean Dumping Act?

ANSWER

We believe our authority is adequate. Under both §103 of the Marine Protection, Research and Sanctuaries Act (MPRSA), the Ocean Dumping Act (ODA) and §404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers is the permitting authority and responsible for issuing or denying applications for proposed discharges of dredged material. Under these statutes, prior to issuing a permit, EPA must review the proposed discharge for compliance with the applicable environmental Criteria (ODA) or the Guidelines (CWA), which are promulgated by EPA in cooperation with the Corps.

Ocean dumping of dredged materials cannot take place without EPA written concurrence. If EPA does not concur on a permit, the Corps may request a waiver of the Criteria if no economically feasible alternatives are available. EPA then has 30 days to grant or deny the waiver.

Under Section 404(c) of the CWA, EPA may deny or restrict the use of a site for discharges of dredged material if the discharge would have an unacceptable adverse effect on aquatic resources. This authority has been exercised only 11 times in the history of the program. Under Section 404(q) of the CWA, EPA may also request Department of Army review of a Corps District decision to issue a permit that EPA disagrees with.

QUESTION #7

The Administration has made proposals to improve Section 404 permitting. Can permits for routine dredging maintenance that benefits commercial navigation be given priority to avoid unnecessary delays or interference with waterborne commerce?

ANSWER

The Administration's August 24, 1993 Wetlands Plan provides that the Corps establish deadlines for Section 404 permit reviews. This regulation is under development and will be published in the Federal Register for public comment. Delays are avoided when the applicant seeks advance interagency input on required testing, sampling design, and available potential disposal alternatives. Pre-application coordination is encouraged by the Corps of Engineers and other Federal agencies. Barring circumstances which may necessitate emergency dredging, or other unforeseen circumstances, maintenance dredging project applicants have been encouraged to conduct long-term planning and pre-application coordination. Long-Term Management Strategies (LTMS) are multi-agency private-public planning approaches recommended by EPA and the Corps. These planning efforts function independently of permitting needs to anticipate total volumes to be dredged and ensure future disposal area capacity. An LTMS also helps to meet contaminant or sediment load source reduction needs.

It is important to note, however, that many dredged material disposal authorizations are timely and avoid unnecessary delays or interference with waterborne commerce. Most maintenance dredging projects are reviewed only when new information necessitates such review, or the permit period (generally 10

years) expires. The presence of contaminants in dredged material proposed for disposal, interference of the disposal with endangered species, and the physical impacts of disposal on sensitive ecosystems are among factors that can raise concern and controversy, thus delaying the permitting of a dredging project. EPA and the Corps have been working diligently, most recently through the Interagency Working Group on Dredging Issues, to identify ways to reduce these delays.

QUESTION #8

Who is responsible for paying for the costs of disposal site management and monitoring plans at designated ocean disposal sites? What are the typical costs associated with the development and implementation of management and monitoring plans?

ANSWER

Pursuant to the 1992 Water Resources Development Act (WRDA), EPA and the Corps are responsible for the development of site management plans for designated ocean disposal sites. Under WRDA, permits for use of these sites can be conditioned to require monitoring. However, WRDA does not address the source of funding for the implementation of the site management plans, or the monitoring plans. In practice, funding for implementation of management or monitoring plans is often divided among EPA, the Corps and the applicant(s), as resources allow.

Specific costs can be highly variable. They depend on site-specific factors, such as the volume of dredged material anticipated, frequency of use of the site, the contamination level and the ecological sensitivity of the site and its surroundings. Management and monitoring at ocean disposal sites can cost from $50,000 to $500,000 annually.

QUESTION #9

Describe the factors that go into EPA's review and approval of dredged material disposal sites under the Clean Water Act and the Ocean Dumping Act.

ANSWER

EPA's authority to designate ocean disposal sites derives from Section 102(c) of the ODA. The Corps has similar authority under Section 103(b) of the ODA on a project-by-project basis. EPA has promulgated site designation criteria which are used in selecting ocean disposal sites. The general factors to be considered are listed at 40 C.F.R. Part 228.5 and specific factors can be found at 40 C.F.R. Part 228.6. These include proximity to sensitive natural or historical resources and areas of other human uses, site-specific physical factors, interference with shipping or commercial fishing, currents, transport and dispersal potential, consideration of the types of materials to be deposited at the site (which is further evaluated by EPA as part of its concurrence role for each permit), potential contaminants, potential for dispersal of nuisance species, feasibility of surveillance and monitoring, the results of the site-specific evaluation, and public comments received during the designation process.

QUESTION #10

Does EPA rely on cost-benefit analysis or comparative risk assessment to determine whether upland or confined disposal is preferable to open water disposal?

ANSWER

Under both §103 of the MPRSA or the ODA and §404 of the CWA, the Corps is the permitting authority and responsible for issuing or denying applications for proposed discharges of dredged material. Under these statutes, prior to issuing a permit, EPA is given authority to review the proposed discharge for compliance with the applicable environmental Criteria (ODA) or the Guidelines (CWA) relating to the environmental impact of the proposed discharge at a proposed aquatic disposal. The Criteria and Guidelines used in this review are promulgated by EPA in cooperation with the Corps.

While both statutes provide for a consideration of need for, and alternatives to, discharging dredged material at an aquatic site, as discussed in the response to Question 6 above, the statutes also provide for waiver of the criteria if the Corps finds there is no economically feasible alternative disposal site other than one where dumping would not comply with the criteria. However, the statutes contemplate that there is a level of impact above which a dredged material discharge is unacceptable. The regulatory standards for these levels are no "unacceptably adverse impact" and no "unacceptable adverse effect" under the ODA (§103(d)) and the CWA (§404(c)), respectively. Thus, these statutes provide a minimum standard for environmental protection.

As the permitting authority, the Corps is responsible for ensuring proposed projects are in compliance with a number of other statutes, including the National Environmental Policy Act (NEPA). The NEPA process involves an evaluation of alternatives to the proposed discharge at an aquatic site. In addition, as part of the permit evaluation, the Corps conducts a public interest review, which may include an evaluation of alternatives to the proposed discharge at an aquatic site. The Corps' actions in choosing a disposal site must be consistent with the Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&G), which were established by Executive Order in 1983. Under the P&G, the Corps must choose the least cost disposal option consistent with requirements of the ODA and the CWA. Finally, the Corps should be consulted for information on what factors are specifically addressed during evaluations under the NEPA and public interest reviews.

QUESTION #11

The subcommittee received testimony that the cost of testing associated with ocean disposal of dredge material can exceed the cost of dredging. Please provide the Subcommittee with an estimate of the costs associated with a typical dredging permit. What is the cost to test for PCBs, dioxin, heavy metals, and other contaminants that may be found in dredged material?

ANSWER

Only in the case of very small projects can the cost of testing exceed that of dredging. In the case of maintenance dredging projects, testing is only required when permits are renewed or significant new information becomes available. Therefore, over the life of the project or the permit, the cost of testing would rarely exceed the cost of dredging and disposal. In addition, since testing is conducted under a tiered approach, costs to project applicants are minimized by requiring only the level of testing necessary to make permit decisions.

Information on the entire cost associated with dredging permits is not collected by EPA. With regard to the costs of testing for individual substances, those costs vary depending on the laboratory, the type of test (i.e., sediment chemistry, bioassays, bioaccumulation test), the specific protocol (i.e., the phase to be tested and procedure to be used), the number of samples and replicates, the sampling and collection method, required statistical analyses, and required detection limits. Each project receives case specific review to determine if testing is required, and what kind of testing is necessary. Testing is to determine the suitability of the material for disposal at the proposed location.

Sediment characterization, including measurements for total organic carbon, oil and grease, grain size analysis, ammonia and hydrogen sulfide, acid volatile sulfides and metals, and organic priority pollutants, may cost from $750 to $1,955/sample. Where dioxins and furans are also analyzed, an additional cost of approximately $1,200/sample can be expected. Biological tests, including a 96-hour elutriate bioassay, a 10-day benthic toxicity test, a 28-day bioaccumulation test with chemical tissue analysis, but without analysis for dioxins and furans, may cost from $7000 to $20,000/sample. Dioxin and furan bioaccumulation analysis may add an additional $3000 to $7,500/sample.

QUESTION #12

Does EPA have a written policy or formal guidance that instructs EPA regions to take into account the cost and permit delays associated with dredged material testing before a region requires a permit applicant to perform such testing? If not, why hasn't this type of policy or guidance been issued?

ANSWER

No. Both the CWA and the ODA require a determination of compliance for a proposed project with Guidelines or Criteria designed to protect aquatic resources. Where contaminants are suspected to be of concern, test results are often necessary for the Corps and EPA to make an informed permit decision. Compliance determinations cannot be made without information on the proposed discharges's potential impacts to human health and important economic or ecological resources.

However, guidance has been issued to the Corps and EPA regarding the appropriate level of analysis required for evaluating compliance with the Section 404(b)(1) Guidelines alternatives analysis. The Guidelines state, "extensive testing, evaluation or analysis" will generally not be needed to make findings of compliance in routine cases, with little potential for significant degradation of the aquatic environment. The ocean dumping program uses a tiered testing approach in its testing manual to guard against unnecessary testing. Under the tiered approach, only information necessary for a decision is gathered. The Section 404 program is presently developing a similar testing manual which will also utilize the tiered testing approach. In practice, the tiered approach is presently used in both programs. Furthermore, navigation dredging projects are often planned and funded

well in advance of permitting, allowing for ample time for pre-application coordination, testing, and exploration of potential disposal sites.

QUESTION #13

Under current law, State revolving loan fund recipients must meet many of the same Federal requirements as if they were receiving a Federal grant. How much do these requirements add to the local cost of wastewater treatment projects? Should any of these requirements be changed or waived?

ANSWER

The Agency has no estimates of how much these requirements add to the cost of SRF loans. Several States have stated that these requirements do add to both the cost and length of projects. We do know that these requirements particularly affect small and disadvantaged communities, and may, in some cases, prevent these communities from seeking SRF assistance. The Administration has proposed providing relief from some of these requirements to make access to the SRF program a more viable option for small, disadvantaged communities.

QUESTION #14

We would also like to provide for the Subcommittee hearing record a list of the Federal agencies involved in the Interagency Working Group on Dredging Issues and a copy of the Working Group's charter.

ANSWER

The group is established by the Secretary of Transportation, in cooperation with other Cabinet members and Agency heads, to provide a forum for the coordination and exchange of information among the Department of the Army, Department of Transportation, the Environmental Protection Agency (EPA), the Department of the Interior, and the Department of Commerce. Members include EPA, the Fish and Wildlife Service, the National Marine Fisheries Service, the Department of the Army/Corps of Engineers, the Office of Ocean and Coastal Resource Management within the National Oceanographic and Atmospheric Administration, and the Department of Transportation's Maritime Administration.

The group's charter is attached (Attachment A).

RESPONSES TO POST HEARING QUESTIONS FROM MR. PERCIASEPE
(answer to question VI supplied by Dr. Zirschky)

QUESTIONS ON DREDGING FROM REPRESENTATIVE MENENDEZ FOLLOWING THE MAY 4, 1994 HEARING BEFORE THE SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT HOUSE PUBLIC WORKS COMMITTEE

QUESTION I.

In 1991, the EPA instituted a revision of their Green Book which establishes guidelines for testing procedures to be completed for the issuance of dredging permits.

I.A. What was the rationale for revision of the guidelines?

ANSWER

Since the Ocean Dumping testing manual was published in 1977, EPA and the Corps had gained a great deal of experience in evaluating dredged material. In addition, several testing improvements were available. The 1991 Green Book was published to assure that the program used the most scientifically defensible and technically feasible methods for making regulatory decisions. The Green Book also adopted a tiered approach to information gathering in order to assure that only necessary testing and information is gathered.

I.B. What was the transition period between the previous guidelines and the new guidelines?

ANSWER:

The transmittal memo that was part of the 1991 Green Book (Attachment B) explained that the procedures in the new manual would be phased-in following a detailed implementation schedule. This schedule was based on the development of local implementation manuals and agreements to implement the new Green Book.

I.C. Did the guidelines go into effect at different times in different parts of the country?

ANSWER:

Yes. Different areas of the country completed their local manuals and agreements and used the updated procedures more quickly than others.

I.D. If so, why?

ANSWER:

Some areas of the country were already running the tests that were specified in the 1991 Green Book before it was published. For instance, since 1977, the Green Book has listed amphipods as a desirable test species. Some areas of the country were using these organisms before 1991 and, thus, had an easier transition to the 1991 Green Book.

I.E. On what dates did the guidelines go into effect?

ANSWER:

The 1991 Green book was phased in at different times around the country. All dredged material for ocean disposal is currently tested using the 1991 Green Book. The following EPA Regions completed their Regional Implementation Manuals (RIM) with their Corps Districts on the following dates:

Region II	December 18, 1992
Region IV	March 15, 1993
Region VI	October 10, 1992

Formal agreements to use the 1991 Green Book were reached between EPA Regions IX and X with their Corps counterparts in April 1992 and November 1991 respectively. Region I is currently using the 1991 Green Book procedures and working with the New England coastal States and New York to develop a RIM that will agree with State requirements as most of their sites are in §404 waters. Region III does not have a RIM, but uses the procedures of the 1991 Green Book at its only ocean disposal site.

I.F. If permits were already in the process was there any study of the additional cost the new guidelines would cost permit applicants?

ANSWER:

There were no formal studies of costs to applicants already in the process. However, impacts on such applicants were considered and grandfathering provisions, including a phase-in period, were provided to reduce costs and disruptions. In essence, the grandfathering provisions allow an applicant with an approved testing plan from the Corps, prior to implementation of the revised testing procedures, to proceed under the previous testing requirements without any impact of the revised testing procedures. Applicants requesting a permit after implementation of the revised testing procedures, however, would be required to use the revised

procedures.

I.G. Was there any consideration given to grandfathering permit applications filed prior to the issuance of the guidelines?

ANSWER:

Yes. A detailed process was attached in the transmittal memo for the 1991 Green Book (Attachment B) explaining the phasing in of projects or permits already filed.

I.H. How were permit applicants informed of the guideline change?

ANSWER:

Both EPA and the Corps undertook an intense public outreach effort to provide all interested parties with an opportunity to learn about the proposed revisions to the Green Book and to comment on them. EPA published a Notice of Availability in the Federal Register in March, 1990, of the Draft revised Green Book and requested comment on it. In this notice EPA also announced seven regional public meetings to discuss the manual and take additional comments. After the final Notice of Availability was published in the Federal Register in April 1991, the EPA Regions and Corps Districts developed their local manuals and provided applicants and potential applicants with the new local manuals. As announced in the Federal Register, copies of the 1991 Green Book are available from the Corps in Vicksburg, Mississippi.

I.H.1. Were they given any opportunity for comment?

ANSWER:

Yes. See Question I.H, above.

I.H.2. What were those comments, if any were solicited?

ANSWER:

Comments were received both verbally and in writing based on the public outreach effort as described above. These comments reflected a diversity of views among port, environmental and public groups. The comments received were taken into account in development of the final Green Book.

I.I. How is the Green Book disseminated to the public?

ANSWER:

A Notice of Availability was published in the Federal Register in April 1991. The Green Book was (and still is) available to the public from the Corps of Engineers. Anyone can write to them requesting a copy. The address to use is:

U.S. Army Corps Of Engineers
Waterways Experiment Station
EP-D
3909 Halls Ferry Road
Vicksburg, MS 39180-6199

QUESTION II:

The process of updating the Green Book began in 1989. In December 1992, a regional version of the manual was issued by the New York District of the Corps and Region II, EPA. This Regional Guidance Manual supposedly reflected regional considerations and incorporated comments and recommendations from laboratories within New York and New Jersey. The most important change in the testing guidance was the requirement to see more sensitive, benthic organisms to assess acute and chronic toxicity. This gave rise to considerable controversy over the amphipod test.

II.A. What record exists to document the scientific need for these tests?

ANSWER:

The potential impact of dredged material disposal on the aquatic environment due to chemical contamination is related to the bioavailability of the contaminant in the dredged material. A number of natural sediment characteristics can affect the bioavailability of contaminants including sediment grain size, total organic content and salinity. The interaction of these factors and the characteristics of the chemical contaminant make it difficult to predict the bioavailability, and thus, the potential for adverse effect, based on the amount of contaminant in the sediment. Consequently, since 1977, the evaluation of dredged material has relied on biological evaluations (bioassays) to directly measure the effect of bioavailability. It is the view of EPA and the Corps of Engineers, as expressed in implementation of the dredged material testing manuals, that bioassays with the amphipod are among the best currently available predictors of environmental effects for dredged material discharges into the aquatic environment. EPA has recently completed development of a methodology for predicting bioavailability of some contaminants in sediment. This methodology has been used to develop EPA's proposed sediment quality criteria.

II.B. What efforts were used to validate these tests prior to their incorporation into the guidelines?

ANSWER:

There are two types of validations that ensure a test "will work" in the regulatory program. Field validations ensure that the test end-point represents and accurately predicts field impacts. EPA's field validation efforts are discussed in the response to Question III.D below. Interlaboratory comparisons are used to ensure that different laboratories reach the same conclusions from the same test sediment. The first step in

the process is to provide laboratories with consistent methodologies to run the tests. The process of providing standard methods is one of periodic review and update to ensure continued improvement. Since 1977, with the publication of the first ocean disposal testing manual, EPA, with the Corps, provided standardized methods for conducting bioassays, including the amphipod bioassay. In 1984, EPA published a method for conducting the amphipod test under the auspices of the American Society for Testing and Materials (ASTM). In 1992, ASTM published a standard guide for conducting amphipod bioassays. EPA has recently completed the development of standard methods for conducting amphipod bioassays in marine, estuarine, and fresh waters. These methods, which will be used by all EPA program offices for assessing sediment toxicity, are consistent with the tests in the 1977 and 1991 Green Book. This year, EPA completed an interlaboratory comparison which demonstrated that these tests can consistently identify contaminated sediment, regardless of what laboratory runs the test. All laboratories participating in the interlaboratory round robin comparison correctly identified toxic sediment samples using the amphipod bioassays. EPA will continue to work with the ASTM, our researchers, and the researchers at the Corps of Engineers, academia, and in private laboratories to refine and improve dredged material evaluation procedures.

II.C. Does validation by EPA mean that the test will work for the regulatory purpose intended?

ANSWER:

EPA believes that the validation procedures described in the answer to Question II.B. above ensure that the tests will work for the regulatory purpose intended.

II.D. An April, 1991 Corps/EPA document, "Transmittal of the February 1991 Testing Manual" states "... technical procedures have been revised to better represent realistic marine organism exposure to contaminants in dredged material."

II.D.1. How does the amphipod test represent realistic exposure to contaminants?

ANSWER:

As already explained, the use of the amphipod test in the 1991 Green Book was not truly a revision to the 1977 manual since amphipods were recommended in the earlier manual. The amphipod

test, as described in both the 1977 and 1991 Green Books and supporting references, closely represents realistic exposure to contaminants. These animals live naturally in marine sediments and live in contact with the sediment. The test protocols include allowing the animals to burrow into the test sediments, build tubes, and ingest food in a similar fashion to their activities in their natural environment in coastal waters.

II.E. Are amphipods actually exposed to contaminants in nature in a manner similar to the test as it was incorporated into the guidelines?

ANSWER:

Yes. Please refer to Question II.D.1.

II.F. Were these tests peer reviewed by experts with respect to the appropriateness of their use in a regulatory testing protocol as opposed to a research mode?

ANSWER:

Yes. Many experts within EPA, the Corps, other agencies and organizations participated in either the development of the Green Book or one of the many opportunities for review and comment. Indeed, EPA's independent Science Advisory Board reviewed the 1991 Green Book and concluded, "[t]he Subcommittee agrees with the current emphasis on acute toxicity, specifically the limitation to mortality, and with the addition of the amphipod toxicity test." The Green Book was developed specifically as a regulatory tool, not a research program. Subsequent to completion of the 1991 Green Book, EPA's standard methods manuals for conducting amphipod sediment toxicity bioassays received widespread review. These methods are being adopted for use by all EPA regulatory programs conducting sediment toxicity assessments.

II.G. Doesn't the body of peer reviewed, scientific literature actually reflect the utility of amphipods as water quality indicators when found in-situ rather than validating EPA testing protocols?

ANSWER:

No. The use of amphipods in sediment bioassays was described in several of the references in the 1991 Green Book. It is the subject of an ASTM Standard Guide, and as described in Question III below, other

literature also exists describing the utility of amphipods in assessing sediment toxicity. The amphipod species selected for use in EPA's standard sediment bioassays are intimately associated with sediment due to their tube-dwelling or free-burrowing, and sediment ingesting nature. Their appropriateness for use as Agency-wide standard tests was further validated by experts in the field of sediment toxicology who participated in a workshop entitled, "Testing Issues for Freshwater and Marine Sediments". The workshop was held in 1992 by EPA's Offices of Water and Research and Development."

QUESTION III:

A December 1992, Chesapeake Bay Program document, "Development of a Chronic Sediment Toxicity Test for Marine Benthic Amphipods" commented, "Due to some unidentified factor(s) that seem to inhibit reproduction, we have been unable to produce large numbers of A. abdita on a consistent basis. We have had spectacular successes followed by complete failure of cultures, with no discernable pattern to explain these inconsistencies." (p.1-22)

III.A. How did A. abdita become the sole amphipod testing choice in the New York region?

ANSWER:

A. abdita was the most studied amphipod in the Northeast. Populations of this species live in the New York/New Jersey area. Studies at the EPA Narragansett Laboratory suggested that it would be the best species for use in the area. Recent Guidance by EPA Region II supports the use of additional amphipod species for toxicity tests.

III.B. How could a species which had problems in even being cultured in a laboratory be considered a reliable testing indicator, much less validated by EPA' Science Advisory Committee?

ANSWER:

There is no relationship between a species being culturable in a laboratory (maintaining generation after generation in tanks over many life cycles) and being useful in a 10-day acute toxicity bioassay. The animals used in the bioassay are of one age group and there is no reproduction involved in the test. The age group used survives very well in laboratory conditions and has been proven to be a useful indicator of sediment toxicity. For instance, amphipod toxicity tests are run routinely in national sediment monitoring programs such as the EPA EMAP Program. Issues such as culturability are important during chronic tests where reproduction and survival of offspring are important endpoints.

III.C. Was the selection of this species an intentional attempt to increase the number of dredging permit applicants which would not be considered suitable for ocean disposal?

ANSWER:

No. This species was selected because it represented a locally available species that was proven to provide a good representation of the toxicity associated with contaminants in sediments. As stated elsewhere in these answers, this species has been used for this type of test since the 1977 manual was published, and is currently being successfully used throughout the country.

III.D. Please submit all validations for all testing protocols involved in the issuance of dredging permits with the dates, procedures and names of individuals involved with the determination of the validity of these protocols as reliable regulatory measurable.

ANSWER:

The evaluation of dredged material suitability for ocean disposal may involve the running of a number of tests. These tests can include sediment and water chemistry, whole sediment and suspended phase toxicity, and bioaccumulation. The number of individual protocols involved in running all possible tests would run in the hundreds. Because the introduction to this question raised issues about the amphipod sediment toxicity test, we assume this is the principle interest and, thus, our response is directed at that particular test.

In 1977, EPA and the Corps of Engineers issued the first national testing manual for evaluating dredged material proposed for ocean disposal. The 1977 testing manual stated that "(i)nfaunal amphipods seem to be among the most sensitive crustaceans and, for this reason, are among the preferred organisms for solid phase bioassays," (p.F3). The manual provided a method for conducting this bioassay. Ever since the issuance of the 1977 manual, EPA and the Corps of Engineers have continued to standardize, validate and improve the amphipod toxicity bioassay.

In 1982, EPA researchers published the results of a field validation of the amphipod bioassay in Commencement Bay, Washington, which concluded that "[the] correlation between laboratory and field results indicates the ecological relevance of the sediment bioassay." (Attachment C, page 353). In 1984, EPA and the ASTM published testing methodology specific to the amphipod Repoxynius abronius (Attachment D).

In 1985, EPA researchers published another field validation of the amphipod bioassay from the Palos Verdes Shelf in California and concluded that the bioassay could be used to identify contaminated sediment sites

(Attachment E). Sediment quality improvement observed at the Palos Verdes Shelf site during subsequent monitoring correlated with reduced toxicity in laboratory bioassays, further validating the responsiveness of the test (Attachment F). These studies and the preceding 12 years of program experience were considered by EPA and the Corps prior to both Agencies issuing the final revised testing manual in 1991.

As addressed in the response to question IIB, EPA has developed standard methods manuals describing sediment toxicity test protocols for five species of freshwater, estuarine, and marine amphipods. These manuals, which have been developed for use by all EPA programs and are consistent with the Green Book, include the results of EPA's two round robin interlaboratory comparison studies, and cite studies validating the tests. Copies of the manuals (EPA Document numbers EPA 600/R-94/025 and EPA 600/R-94/024) are now available from the Agency's Environmental Research Laboratory in Duluth, Minnesota. Additional copies will be distributed through EPA's Center for Environmental Research Information in Cincinnati, Ohio".

QUESTION IV:

A December 22, 1993, EPA memorandum on the subject, "Technical Panel Recommendations Concerning Use of Acute Amphipod Tests in Evaluation of Dredged Material." states, "The EPA researchers developing the standard protocols recommended that laboratories running the amphipod toxicity tests take the following steps to reduce the likelihood of obtaining invalid test results." Ten additional controls are recommended since it is clear at this point the test is flawed.

IV.A. Why did the agencies continue to adhere to this requirement when no one could reliably pass this test?

ANSWER:

The subject memorandum (Attachment G) does not indicate that the test is flawed. It describes proper laboratory procedures that need to be followed which are similar to, if not exactly the same as, the proper procedures for any test. It also describes how Federal regulators should review contract laboratory data to be sure that the laboratory was capable of running the tests, since there are laboratories applying for contracts that have no idea how a bioassay should be run. This is a standard process for eliminating unacceptable laboratories, not an indication of the appropriateness of the test itself. There are many laboratories nationwide that are successfully conducting the amphipod tests.

IV.B. Were the agencies trying to use the permit applicants to fund the research to improve the agencies' regulatory testing requirements?

ANSWER:

No. As indicated in our previous response, the Agency is using the amphipod test because it is a reliable, meaningful test that can be routinely conducted by qualified laboratories.

IV.C. Under what authority are the agencies "taxing" permit applicants to fund research on regulatory criteria?

ANSWER:

There was no "taxing" of any permit applicants for these tests. The tests are run to implement the environmental Criteria of the Ocean Dumping Regulations using the most appropriate organisms available.

QUESTION V.:

As recently as April 18, 1994, more than three years since the final publication of the Green Book, EPA Region II and the NY District of the Corps have not validated the species used in toxicity testing in the region. Round robin testing was just beginning and protocols still had not been prepared.

V.A. When will permit applicants be assured that the significant funds they must invest in testing will represent a validated and fair test regime?

ANSWER:

EPA thoroughly evaluated all existing data to be sure that the test was valid before it was selected for use in national testing (see Question III.D), and has since issued clarifying guidance to the field as noted in Question IV. ASTM standardized tests are used whenever possible and the testing regime we have set up is reliable, technically sound, and fair. EPA will continue to work with the ASTM, our researchers, and the researchers at the Corps of Engineers, academia, and in private laboratories to refine and improve dredged material evaluation procedures.

V.B. What is the comparable status of other regions of the country having validated Green Book protocols?

ANSWER:

All regions of the country are successfully using the 1991 Green Book to evaluate sediments for ocean dumping. See Question I.E for details.

QUESTION VI:

What is the position of the agencies regarding the use of the Harbor Maintenance Trust Fund for the development of disposal sites?

ANSWER:

The Harbor Maintenance Trust Fund is used to fund the maintenance of deep draft Federal channels and harbors. It is EPA's understanding that the current funding ceiling on the Operations and Maintenance program of the Corps of Engineers would not make new money available from the Trust Fund for new activities without requiring offsets from other parts of the Corps' programs. The Corps of Engineers is much more involved in use of the fund and would be better able to evaluate the impact of offsets and other issues as they pertain to use of the fund for disposal site development.

Mr. BORSKI. On our second panel we have Mr. Ronald L. Norris, Past President of the American Public Works Association; Mr. Edward O. Wagner, Deputy Commissioner, New York City Department of Environmental Protection; and Ms. Roberta Haley Savage, Executive Director and Secretary/Treasurer, Association of State and Interstate Water Pollution Control Administrators.

Please rise and raise your right hands.

[Witnesses sworn.]

Mr. BORSKI. Let me remind the panelists that your full testimony will be made a part of the record and we would ask your oral presentation be limited to five minutes and, Mr. Norris, you may proceed.

TESTIMONY OF RONALD L. NORRIS, P.E., DIRECTOR OF TRANSPORTATION POLICY, MID-AMERICA REGIONAL COUNCIL, AMERICAN PUBLIC WORKS ASSOCIATION; EDWARD O. WAGNER, DEPUTY COMMISSIONER, NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND DIRECTOR, BUREAU OF CLEAN WATER NEW YORK, NY, REPRESENTING THE AMERICAN ASSOCIATION OF METROPOLITAN SEWAGE AGENCIES; ROBERTA SAVAGE, EXECUTIVE DIRECTOR AND SECRETARY/TREASURER, ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS

Mr. NORRIS. Mr. Chairman, honorable committee Members, my name is Ronald Norris, and in response to your invitation, I am pleased to appear before you representing the 25,000 members of the American Public Works Association.

I am particularly pleased to appear at this time as our association is celebrating its centennial year.

I intend to respond specifically to the four questions which you posed in your letter of invitation. In so doing, I do not intend to restate what I know you have heard hundreds of times, and that is the need for more funding. That need is obvious on its face and has been well documented.

The theme I do intend to sound is the need for a long-term focused and sustained investment strategy, making the most of what is available.

Public works projects should not be viewed simply as economic stimuli nor just as make-work projects, but rather as strategic investments made in an orderly and sustained fashion targeted toward achieving well-articulated national priorities. This must be a sustained effort. Short-term strategies are not only wasteful, they can be counterproductive.

The first question in your letter asked us to assess the Nation's current and future infrastructure needs, not a small question. We attempted to do this from a theoretical viewpoint, I think.

First, we have a need for vision. We need to broaden our vision of public works from mere physical structures to viewing them as the physical tools to achieve your broader goals.

Second, we have a need for strategy that is based on a long-term view of infrastructure investment. We need public works policies that reflect national and global perspective, but are adaptable to local needs and conditions.

We would say that like politics, all public works are local. They impact the daily lives of our customers locally. Public works must fit community needs, values, local geographic and environmental conditions, and local financial resources.

From the perspective of the local public works official, an effective public works strategy is global in outlook, local in application, and flexible in practice.

The third need is for effective implementation. To many of us this implies investing in maintenance. We believe that maintenance is the new frontier for public works and coming up with more effective management tools, technologies, and innovative funding concepts to keep what we have from deteriorating is, in many ways, a bigger challenge today than the construction of dams, highways, and bridges was yesterday.

You asked us to describe the consequences of the failure to make the necessary infrastructure investments and improvements. I think we can keep that to a simple one-line answer. And that is that as a Nation we lose the ability to function effectively in a global economy.

There are tiny little time bombs out there waiting to go off, and daily some do.

There are the visible time bombs of deteriorating roads and bridges, they are everywhere; there are also the invisible problems of water lines and sanitary sewers that are 50 or 100 years old. When breaks occur, the results are generally not dramatic, yet, taken as a whole, the results are significant.

Environmental degradation, service interruption, traffic delays, all these problems take money from the pockets of our customers, the public. Delays equal productive dollars taken out of the economy. These tiny little time bombs place a significant drain on the economy and degrade the quality of life.

You then asked us to delineate how the Federal Government can facilitate infrastructure improvements. First, we would ask that you consider providing a multiyear capital improvement budget which incorporates an integrated national multiagency policy. This would be the embodiment of a long-term focused and sustained investment strategy.

We ask that you set strategic goals and objectives. We need to identify those strategic investments which best serve the long-term interests of the country. I contend that failure to invest wisely is in many ways more damaging than failure to invest enough.

In our mind, strategic goal setting, while foregoing prescriptive regulations, is very desirable. This to us equals the elimination of unfunded mandates. The proliferation of unfunded mandates has distorted local priorities and resulted in a disinvestment of infrastructure at the local level.

Recently, APWA, the Army Corps of Engineers, and the National Academy of Public Administration did a study of 12 public works agencies across the country. The title of this study was Identification of Roadblocks and Opportunities to Improve Public Works Performance. Unfunded mandates figured prominently in the Federal portion of those roadblocks.

The study recommended for considerations and further discussion of unfunded mandates the following: First, State and Federal

mandates should be issued only when accompanied by a clear statement of goals, objectives and standards.

Second, the U.S. Congress should provide a reasonable level of funding assistance to agencies subject to Federal regulations that involve substantial implementation costs.

Third, environmental regulations should be tied to risk assessment standards for public health and environmental quality, rather than best available technology. I think that was the discussion we just heard.

As much as practical, regulations and mandates should be tailored to local conditions and flexible solutions based on those conditions.

The third area which the Federal Government could undertake that would help in the implementation of infrastructure policy is to coordinate policies and regulations. Many are conflicting, most are confusing.

Financing legislation is yet another important means by which infrastructure could be facilitated. For example, APWA advocates the elimination of arbitrage rebates or, at a minimum, greatly increasing the annual issuance limit for that arbitrage rebates.

One of the most important ways the Federal Government could facilitate infrastructure investment is across the board to adopt a flexible, goal-oriented approach. ISTEA is a major step in the direction we are suggesting. This farsighted piece of legislation incorporates the elements of local involvement, flexibility, and goal setting. It is a move away from the proscriptive philosophy which has oftentimes provided less than optimal local solutions.

Finally, you asked us to outline the roles of State, local, and private sector resources when dealing with the revitalization of the Nation's resources. That is a very broad topic, and I will attempt to respond in one paragraph.

First, I would say that one size does not fit all. We must have a whole arsenal of tools available. We must then be able to select the right tool for the right job. Fixed, uniform, and prescriptive Federal standards discourage innovation and direct our limited resources away from productive areas into much less productive areas.

Allow us, the implementers, the freedom to innovate, to create, and to find the right tool for the job. I think it was Mazel who said he who is good with a hammer tends to see everything as a nail. Not everything is a nail. Allow and encourage public-private partnerships. Allow and encourage the solutions which transcend political and institutional frameworks.

Sometimes the physical problems just do not fit those existing frameworks. Fixed standards that are used to enforce uniformity are hammers in search of a nail. Set the goal and let the communities work out the best way for them to reach that goal.

In summary, we at APWA believe there is a strong need for an integrated, long-term focused and sustained public works policy. We believe the key to establishing such a policy is close coordination between policymakers and policy implementors.

As representatives of the policy implementors, we are willing and anxious to work with you as you continue to provide leadership in this important arena.

Thank you for the opportunity to appear before you today on behalf of the implementors of infrastructure policies, and programs in our local communities throughout the Nation. I will be pleased to answer questions now or in writing.

Thank you.

Mr. BORSKI. Thank you, sir.

Miss Savage.

Ms. SAVAGE. Yes, thank you, Mr. Chairman. My name is Roberta Savage, Executive Director and Secretary/Treasurer of the Association of State and Interstate Water Pollution Control Administrators, the State regulatory agencies that manage the Clean Water Act on a daily basis.

I was sitting here listening to Bob Perciasepe testify, and I was glad Bob went through all the numbers. While we could argue numbers with USEPA, I was glad he went through them all with you, so I don't have to spend your time with it.

I was looking at the pictures of Mr. Roe, Sterlyn and Mr. Anderson, and I realized that my first testimony before the Congress was in February of 1979 before this subcommittee—I realized I have congratulated and thanked staff many times—David, Ben, and Randy, and whatnot—but Sterlyn was in the room that first testimony taking care of business like he is today. Am I embarrassing you, Sterlyn?

The one consistent thing that has permeated this committee is Sterlyn and the fine work that he does on all our behalf, members and witnesses alike. Sterlyn, I wanted to recognize you after all the years that you spent with this committee and subcommittee because you do such darned good work.

I would like to spend just a little time and submit for the record two documents, one is called Water Resources Update. It is a document that was put together by the Universities Council Water Resources. Aside from my article, there are a number of very good articles in there that will help with some of the issues that we are talking about today.

The second thing I want to submit for the record is the State's Clean Water Reauthorization package that our association has developed with the Nation's governors. This document is currently out for comment by the 50 governors and of course Mr. Chairman, you have a copy of this document, as we discussed last week.

To reiterate things that we have said, we feel the act is sound, and I think a number of Members agree that basically tinkering, streamlining and honing in on some of the key provisions is where we need to be.

There are issues that need to be dealt with, but a major overhaul of the Clean Water Act at this point seems inappropriate.

As Mr. Norris and others indicated, program funding is not keeping pace with the Federal requirements. All you have to do is look at the 1987 amendments to know the majority of those new requirements are not being funded even currently. So as we add new requirements of this Clean Water Act reauthorization, we are so far behind the 8-ball and there is no way we can meet the public's credibility test in meeting the requirements of the existing Clean Water Act or any new requirements.

Also, Mr. Norris—and I would just say that I align myself with most everything you have said—good job. Mr. Norris indicated that the lack of resources was making it very difficult for State and local governments and others who have to implement these programs to run effective programs.

And, in many instances, we are not given the flexibility to do the job that you mandate. What do the States want?

What we want is the opportunity to meet the Clean Water goals in a way that you need us to meet the goals, but in a way that we can, in our States and local governments, do it the most effectively.

And to follow all the rule books that come out from the "island surrounded by reality" known as Washington, D.C., or otherwise known as 401 M Street, is not the most efficient way to do it in all instances. So when we say flexibility, we want the opportunity to do what is right in the most efficient and cost effective way.

We need obviously to fully capitalize the State revolving loan fund. That was a provision that our association worked closely with you all on. Mr. Roe if you remember initiated that amendment for the House and we feel strongly it is an effective program.

We took Mr. Reagan's threats of killing the construction grants program very seriously. He only missed it by a couple of years of his term, but he said to a number of us, through David Stockman, "if you folks want some kind of funding for wastewater treatment, you better figure it out because there will not be a grant program when I leave office." We took that seriously.

States initiated, with you all, an effective SRF program. And to come back now and look at the potential for undermining that program with specific grants for local communities, that for whatever reason have not met the requirements of the Clean Water Act, is very troubling. And, we have to question whether that is good public policy.

Why Mr. Bush felt the need to reestablish the grants program is a real question in my mind, but the fact of the matter is, he did.

I was giving a talk in Kentucky awhile ago and folks on the Ohio River said, "we did not initiate the grants program, but it is there now, so we will put our proposal in." That is what you will see across the country.

We want to go back to basics, sound reasonable science development from USEPA, good monitoring from the States. Yet, these programs are regularly cut. They seem to be at the bottom of the list, and yet you all call us up for oversight review and say "tell us what you have done." And we say we would like to do what you ask, but we cannot do it, and it is an uncomfortable position to be in. It is no wonder the public does not trust State and local governments, USEPA or this body either in some instances.

We of course feel the States need to maintain the lead role in water protection. We talk about reinventing government, and we think this means making the States and local governments more effective and efficient. As I look at both the Senate and House bill, we do not see it going in that direction. And to have the discussion of roles and responsibilities after 22 years of this program is mind-boggling to me, and I think we need to move on with a solid working relationship and not complicate it by restructuring programs like water quality standards.

The representative from Michigan mentioned the funding formula for wastewater treatment. For an association made up of 50 States, that is one of the most deadly discussions you can have around a table of state ASIWPCA members, but there is a theme that concerns a number of folks, and that is funding facilities in communities that for whatever reason have not met the requirements. Some would argue that this is penalizing those who have moved forward efficiently. In fact, what happens is you take away money from the people that are meeting the requirements and give it to the ones who are not. Isn't this counterintuitive to pollution preventive creativity. If you do good, we are going to take your money. That is the antithesis, an oxymoron, to doing the right thing.

With regard to the needs survey, I was glad Bob brought that up. That is an area we feel is very, very critical to the effectiveness of the program and to giving you the numbers you need to do your job.

On the other hand, over the last five or six years the agency (USEPA) has not had the money to do an effective job. They are doing tabletop analysis for a quick turn-around, and not a comprehensive needs survey.

I will quickly summarize that we think there needs to be something done for the small communities. On the other hand, the SRF is currently funding—one-third of its funds are currently going to small communities, and any funding that would be made available for the small communities needs to be under the SRF.

A couple of small points and I will close. We are talking about State revolving loan funds for the drinking water program. I would ask this committee, who spends more time looking at where we have been and how we might get where we are going than do some others, to look at those two SRF's.

Why would we consider having different requirements for the two programs? At present the bills are different and the requirements for the SRF are different. That is counterintuitive. It is also counterintuitive to take Clean Water Act money to create a new organizational structure for an SRF in another program.

I think when some of the folks wake up and say, oh, my goodness, we have two SRF's we have to run with the same money we had last year to run just one, they are not going to be too happy.

So I would suggest that other monies be found and that we not take money from Clean Water Act to fund the SRF and drinking water.

Again, the $500 million takes away from the SRF and we would at least like to see, if special grants have to be given, which we question, but if they do, at least that they go under the SRF so they can be managed as a part of a whole.

We have listed our recommendations, and, Mr. Chairman, you know what they are, Mr. Mineta knows what they are; $5 billion for an SRF—I know, in my dreams—streamlined program, more efficiency, hardship communities, very reasonable CSO policy, which we have worked on, I know we have with EPA, the environmental community, and the cities for combined sewer overflows, something reasonable on storm water for the cities to implement.

We very much need to focus on nonpoint sources and do a better job in that area, but please not at the expense of the clean water program for point sources. Robbing one program to fund another gives us two bad programs.

So I appreciate the opportunity, as always, to appear before this committee and I welcome your leadership. We appreciate having the opportunity to testify before the committee.

Thank you.

Mr. BORSKI. Thank you very much.

Mr. Wagner.

Mr. WAGNER. Good morning. My name is Edward Wagner, and I am the Deputy Commissioner of the New York City Department of Environmental Protection. This morning I am appearing representing AMSA.

AMSA represents 150 of the largest wastewater utilities in this country whose members serve about half of the sewered population in the Nation. What I would like to do this morning is to give you AMSA's perspective on the funding issues related to infrastructure, that infrastructure which protects and restores the Nation's water environment, and to do that, I will give you a preview of AMSA's most recent survey of its members' needs.

It is called "Cost of Clean, 1994". This is the cover. Look for it when it arrives in your offices. It should be in a week or so, when it comes back from the printers.

Within that, I would like to discuss the impact of these costs of the "Cost of Clean" on AMSA ratepayers, tell you a little bit about New York City's program as an example, and then suggest how Congress can address the issues of funding in a reauthorized Clean Water Act.

It has been 22 years since the Federal Water Pollution Control Act established Congress' commitment to restoring the integrity of the Nation's waters, and since then enormous progress has been made in water quality. The health of our waters is improved. In addition, this program has provided jobs. It has enhanced economic development. It has improved recreational opportunities.

In the current debate on Clean Water Act reauthorization, there are, clearly, strong emotions about what remains to be done and how to do it, and most significantly, who should pay for it.

As I mentioned, next week we will be distributing the "Cost of Clean," and what that report documents is that water pollution control needs remain considerable. Significant additional funds are needed for emerging areas such as combined sewer overflow abatement, storm water management, and nutrient control of nonpoint sources.

And so it is clear these needs are going to require even more money than we have spent already to date in the 22 years since the enactment P.L. 92–500. And so the point is that the job that we set out to do 20 years ago is still nowhere near done.

A little bit about what is in our report. We received information from 100 AMSA agencies about what they expect to spend in the next five years. They expect to spend over $32 billion in capital investment. Some areas where that money is going to go, about 30 percent, or about $10 billion will be spent on completing the job of

getting all the Nation's plants on secondary treatment, a goal that was set 22 years ago.

More than one quarter of that amount will be spent on rehabilitation and repair. That is to keep our existing infrastructure going.

An interesting item, I think, is that $5 billion is planned to be spent by only 28 of the AMSA communities who have combined sewer overflows, and that is only 28 of the 1,100 communities nationwide who have CSOs.

We also point out in the report expected O&M costs. O&M costs have never been discussed in the context of Federal assistance. They are shared, borne completely by the locality and generally represent more than the capital budget in an agency's spending.

Since 1984, over the last 10 years AMSA's agencies O&M costs have increased from $3 billion to $7 billion. That is a doubling every eight years.

The impact on those who pay for these expenditures, the users, the ratepayers at the local level, the household user fees are doubling every six years in the experience of AMSA agencies. And it is clear to us that the shift from Federal grants to a loan program is directly related to the fact that these user rates are going up at three times the rate of inflation.

And so who then is paying for the Cost of Clean? Of this $32 billion in capital investment by the 100 AMSA agencies over the next five years, only 8 percent will be from Federal assistance. Local government will be shouldering 84 percent directly. And that is in addition, of course, to the 100 percent of the O&M cost that they routinely bear. Only 7.6 percent of the $32 billion is expected to come from the State revolving funds, and we can talk a long time about why that might be, but the point here is that, in any event, these are loans which must be repaid. So when you add that into the local share, the real local burden is over 90 percent.

And so that is what we would like to urge you this morning to reflect upon, on what the real Federal commitment is to the clean water program and what it might be.

As an example, in New York City we have 14 wastewater treatment plants and about 6,000 miles of sewer pipe under our streets. In the last 20 years, we have spent $2.6 billion to upgrade our treatment plants and build two new plants.

In the next 10 years, we are going to spend $5 billion. So we spent $2.6 billion in the last 20 years and in the next 10 years, we are going to spend twice that amount, and for very real needs. We need to complete secondary treatment at one plant. We have large sludge management needs. We have combined sewer overflows to abate and, of course, there is the continuing repair and rehabilitation. Again, the $5 billion as a capital investment does not include our O&M expenditures.

The benefits from these programs are significant, and it is a worthwhile investment. The water quality benefits to New York Harbor as well as the economic stimulus that this program has provided and will continue to provide are important. For example, in one project, the upgrading of our remaining plant, we estimate that the direct and indirect employment arising from that project is on the order of magnitude of 3,600 person years for jobs, and the wages and salaries associated with that is about $124 million.

The point, however, is that for New York City as well as other AMSA members, Federal assistance is crucial. Our city's combined water and sewer rates over the last—well, since 1980, has increased 300 percent, and for the wastewater component alone of that rate, the increase has been over 1,000 percent.

The unfortunate and distressing fact is also that the greatest burden of these increases is on low income residences and older, higher density housing, and these double digit annual increases in rates clearly, in our opinion, is related to housing abandonment and less new development.

And so I think the point to remember here is that while we support the loan program, and it is a key part of the foundation for financing clean water infrastructure, we must also recognize that what has happened by replacing direct Federal assistance with a program of loans really has just increased the burden on the ratepayer.

So what does this mean in the context of a reauthorized Clean Water Act? It is AMSA's position that the Nation cannot afford to stop the continued environmental and economic progress that the current clean water programs provide. What we need is continued and additional Federal support.

Recognizing the funding constraints at all levels of government, it should also be recognized that the job will not be done, cannot be done with the current disproportionate burden on local government.

And so we propose, as part of a workable reauthorized Clean Water Act, four key elements:

The first is increased Federal funding. We are proposing, and we have language attached to our testimony, a new formula which we call the Funded Mandates Amendment. What this will do is to fully capitalize the SRF program over the next 10 years and provide that funds which are available above that are available for grants to high-priority projects.

EPA estimates about $15 billion will be needed to fully capitalize the SRF, and if that is done over 10 years, that requires an average annual expenditure of $1.5 billion a year. It is our proposal that funds that are available in excess of that amount be made available through the State programs for grants.

The second point is that there should be a national program of comprehensive watershed management. The remaining water quality problems in this country are complex, and they vary from site to site, and so what is needed, we feel at this time, is a bottom-up, stakeholder driven process rather than the old command and control programs that we have had for the last 20 years.

This process will allow us to address the priority problems first. And we feel that this approach will result in faster, more effective environmental improvement and, ultimately, will provide considerable savings to local ratepayers.

Third, nonpoint source controls must be strengthened in the Act. Most of the water quality impairments in the country are now due to nonpoint source pollution. Further restrictions on point sources without addressing these nonpoint source problems will not only be ineffective, but wasteful of local resources.

And then finally, we urge that the reauthorized Clean Water Act codify the recently finalized EPA national CSO control strategy, and as well as streamline the storm water program.

The CSO control policy came out of two years of regulatory negotiations. The policy provides State and local governments with clear direction, and yet allows the flexibility that is needed to address site specific concerns. Previous proposals for CSO control were estimated to cost as much as $160 billion nationwide. And the current estimate under the new policy is $41 billion. Significant relief for local ratepayers. And, similarly, the cities need flexibility when implementing storm water programs.

So to summarize. First, the Nation's remaining water quality needs are still great. There must be continued commitment at all levels to address these needs. Localities alone do not have the resources to do the job.

The reauthorized Clean Water Act must address both the short and long-term infrastructure needs so that we can continue to have progress in restoring the nation's waters as well as providing economic stimulus and growth.

And, finally, there must be opportunities provided through comprehensive watershed management to provide relief for local government and to reshape environmental decision-making so that these investments are made wisely and effectively.

That concludes my testimony, Mr. Chairman. We look forward to working with you and the committee and the subcommittee on these important goals, and I thank you for the opportunity to be here today.

Mr. BORSKI. Thank you very much, sir.

Let me ask each of you what your reaction to the proposal of the Federal Trust Fund for drinking water and wastewater infrastructure funded by a user fee on consumption of water is.

Mr. Norris.

Mr. NORRIS. I think any effort at funding these mandates that have fallen upon the local communities would be welcome, without careful analysis of it.

Ms. SAVAGE. Mr. Chairman, our position is that a fee program is most likely necessary; that we simply do not have the money to do what you ask us to do.

And the National Governors' Association currently has a position favoring fees, but I will tell you within their ranks there is a discussion among some governors that they do not want the Federal Government telling them how to tax the citizens of their State.

So there is a political concern, but the professional and technical reality is we do not have enough money to do what you want us to do.

There is also a concern about the implementation of the air program, and that the fees that are collected are not eligible for the State to use as match. And they believe that if they are State tax dollars, they should be able to be used as match as well.

Those are issues that have been raised by some States. But if we do not develop some kind of fee program and the Federal Government does not pay for it and the local and State government does not have money to pay for it, I guess I would have to ask how we are going to do it.

Mr. BORSKI. Mr. Wagner.

Mr. WAGNER. I would echo those. I have not seen the latest version of the trust fund proposal, but if it provides relief to local government, we are for it. If it is just a matter of funneling money from local government through the Feds and the States back to local government again, that does not sound very efficient.

Ms. SAVAGE. Agreed.

Mr. BORSKI. What are the long-term economic and environmental consequences of deferring infrastructure maintenance and capital improvements?

Mr. Wagner.

Mr. WAGNER. Critical. I can speak from personal experience in New York City. There had been, prior to the 1970s, when many of our plants were rebuilt, there was a neglect of infrastructure and these plants were barely rescued by that program, which, I might add, was substantially funded through Federal grants.

We take that seriously. And I think if you look at the report that AMSA will be issuing next week, you will see a very substantial amount for repair and rehabilitation as a reflection that we must not only do the additional things that are needed to have further clean water progress, but we have to protect and preserve what we have already built.

Ms. SAVAGE. Mr. Chairman, it makes no sense to us to invest over $100 billion in achieving secondary treatment for most communities nationwide and then to walk away from the program only to have those facilities come to their useful life and not be effectively maintained or able to meet the needs of the community.

It is just the wrong—it is bad public policy to walk away from a program that is working.

Mr. NORRIS. I think that there are three levels of maintenance that we are really talking about, and our response is broader than the simply wastewater. Our association covers all facets of public works.

The ability to interdict a problem with preventive maintenance is important, that is when it is most cost effective to address a problem.

Next, it is a repair problem, and finally it is solved by replacement. We have discovered that there is little or no constituency for maintenance. There is constituency for new programs, there is constituency for new construction, there is no constituency for maintenance.

We hope that when we finally do have an integrated public works policy, that maintenance will figure prominently in it and that there is assurance that adequate maintenance dollars will be addressed.

Mr. BORSKI. Mr. Norris, you propose a center for the study of public works to serve as a think tank on public works issues. Would it be more effective to use existing resources at public and private colleges at universities?

Mr. NORRIS. I think that is exactly what we are talking about. Now, we are talking about a coalition of existing resources but focusing some of that research, focusing some of that thinking in very productive targeted ways.

I think there is a lot of good research that is going on out there now, but it is not focused on an integrated policy, and I hate to keep coming back to that theme, but there is so much fragmentation that we do not have focus.

And I think if we had a central body that could bring focus to this work that is going on, it would be very helpful.

Mr. BORSKI. Would you regard the Strategic Highway Research Program of the Transportation Research Board as a model for how such a research consortium might operate?

Mr. NORRIS. Yes, we are very supportive of that. I think that was an excellent program.

Mr. BORSKI. Mr. Norris, I believe you said a failure in maintenance is a key problem is preserving our infrastructure investment. Do you think our infrastructure financing programs create financial disincentives to do adequate maintenance?

Mr. NORRIS. Absolutely. There are grant programs for new construction. There are strategic decisions made at the local level not to invest in maintenance when you can let it slide and balance your budget, meeting other demands such as unfunded mandates, and at some point in time, you will have to repair by replacement and there are grant funds that are available for repair by replacement.

It is a very inefficient use of tax dollars.

Mr. BORSKI. How can the Federal government encourage States and local governments to do adequate maintenance?

Mr. NORRIS. I think probably by a couple of ways.

Mr. BORSKI. I would like each of you to respond to that.

Mr. NORRIS. Perhaps as part of a grant program, there could be a component that would assure the granting agency that maintenance is a part of the management function and part of the management tool that is being applied to the overall resources; that there is a minimum level of investment that is for ongoing preventive maintenance and that you are meeting a floor of expenditure before you start investing in new programs.

Mr. WAGNER. I think my response to that would be that there probably is no appropriate direct Federal role in ensuring that proper O&M is done. I think that is up to the locality to make sure that it is managing its resources properly with State oversight through the permitting program.

But indirectly, the issue really again comes down to the pressures, the economic pressures on the locality to do more with what it has. And if it is going to be forced to make large capital investments, it is going to be encouraged to cut back on maintenance programs.

So there is a tension between good management and responsible expectations on the part of all levels of government.

Ms. SAVAGE. It is incumbent, I believe, in the development of a program between State and local governments for the construction of wastewater treatment, whatever vehicle you use, to be sure that proper O&M is incorporated in that agreement.

Also, good operator training, either sponsored by the States or municipalities themselves, or certification process that is in cooperation with universities or so on are also ways to make sure that those facilities are well maintained by people who know what they are doing.

But I would agree with Ed, the Federal Government really does not have a role to speak of in this area.

Mr. BORSKI. Does the gentleman from Wisconsin, Mr. Barca, have questions?

Mr. BARCA. Thank you, Mr. Chairman. Along the same lines of the questions that were asked in Chairman Mineta's opening statement, he said would you believe that in the United States of America 900 people die each year due to contaminated drinking water.

And I guess what I would like to know is with the investments that we made to date, or lack of investments thereof, are we in danger of having that escalate significantly? Is that a real concern at this point?

I mean obviously it is a big concern that 900 people are dying here. That is a tremendous concern in and of itself. I guess the question I have is that going to escalate with all greater investment; is that related directly proportional to the amount of investment that we are making in infrastructure in that respect?

Ms. SAVAGE. I think it has a relationship certainly, which is one of the points I made earlier. We are very concerned to see the State revolving loan fund for drinking water coming at the expense of the clean water SRF. And there is a reason for that.

If you look—not only good old turf and sacred self-interest, but there is a real environmental reason, and that is that wastewater treatment is the best pollution prevention program for the drinking water systems that exists.

And if we are not doing our job with wastewater treatment, then the chances of having a problem in the drinking water source is major, and we have seen that demonstrated recently here in the District, and certainly you have had some problems in your State as well.

Throwing money at it alone is not a philosophy that we can afford any longer. But being efficient with the money that we have to do the best job and blending the appropriate programs together and not putting clean water against drinking water as a turf issue or as a tug-of-war is fundamental to all of that.

So we have to make sure we have quality programs in both areas to do the job for the drinking water source as well as for other social uses.

Mr. BARCA. Let me ask this, then. Just with that statistic of 900 people dying a year, what is the primary cause of that, and what can we do to prevent that?

Ms. SAVAGE. The drinking water program is not my primary responsibility. I can work with my colleagues to get the answer to your question, but I think Mr. Norris has more expertise in that area.

As I say, I can counsel with the State folks that can give you that answer, but that is not my primary responsibility.

Was that a good punt?

Mr. BARCA. That would be helpful.

Mr. NORRIS. Actually, you are wrong, I do not have more expertise in that area, so I will have to get the answer for you as well.

Ms. SAVAGE. Okay, punt two.

Mr. BORSKI. If there are no further questions, thank you very much for your testimony today. It has been very helpful.

Mr. BORSKI. On our third panel we have Mr. Carmen F. Guarino, Chairman, WRC, Inc./Guarino Engineers representing the Water Environment Federation; Mr. A.E. Bragger President, A.E. Bragger Construction Company representing the National Utility Contractors Association; and Mr. Scott McElwee, McElwee Scarborough Construction, New Jersey, representing the Associated Builders and Contractors.

Would you please rise and raise your right hands? Do you solemnly swear the testimony you will give before the subcommittee will be the truth the whole truth and nothing but the truth so help you God?

[Witnesses sworn.]

Mr. BORSKI. Thank you very much. Let me remind you that your testimony will be made a part of the record and we have asked you to limit your oral presentation to five minutes, if you can.

And Mr. Guarino we will start with you.

TESTIMONY OF CARMEN F. GUARINO, CHAIRMAN, WRC INC./GUARINO ENGINEERS, ON BEHALF OF THE WATER ENVIRONMENT FEDERATION; A.E. "TED" BRAGGER, PRESIDENT, A.E. BRAGGER CONSTRUCTION, WARWICK, RI, REPRESENTING THE NATIONAL UTILITY CONTRACTORS ASSOCIATION; AND SCOTT McELWEE, McELWEE-SCARBOROUGH CONSTRUCTION, GIBBSBORO, NJ, REPRESENTING ASSOCIATED BUILDERS AND CONTRACTORS

Mr. GUARINO. Mr. Chairman and Members of the subcommittee, my name is Carmen Guarino. I am in my 44th year of work in the water and wastewater field. For more than 30 years, I was employed by the Philadelphia Water Department. For the last eight years I served the city as the Water Commissioner. The Water Department of Philadelphia covers both water and wastewater services.

For the last 14 years, after retiring from the city, I have worked internationally in all aspects of water and wastewater problems. I am a registered professional engineer, a certified treatment plant operator, a diplomate of the American Academy of Environmental Engineers, and I am presently Chairman of the Water Research Center and Guarino Engineers.

I am here today representing the Water Environment Federation. This is an international organization of professionals dedicated to improving water quality. I should also add that I am a past president of that organization.

From this perspective, I would like to share with you three issues which are critical to our understanding of municipal wastewater infrastructure needs.

First, there has been a major increase in clean water requirements as a result of the 1972 Clean Water Act and subsequent amendments, especially the 1987 amendments. These requirements include: Implementing secondary treatment, meeting more stringent water quality standards and local limits, implementing industrial pretreatment programs, controlling chemical-specific toxics and whole effluent toxicity, controlling combined sewer overflows, and compliance with storm water permits.

In addition, the regional programs, such as the Great Lakes initiative, which have even more restrictive requirements, are being looked at as models which we may ultimately have to do in other parts of the country.

My point here is that there are numerous and extensive requirements which municipalities are continuing to implement.

Second, there has been a major increase in cost to municipalities for building needed wastewater treatment facilities. Spending for these facilities by Federal, State, and local governments is approaching $100 billion since 1972. Even more will be needed over the next 20 years according to the EPA in the 1992 Needs Survey.

This latest assessment of national wastewater infrastructure needs indicates, among other things, that $26 billion worth of secondary treatment construction needs still remain. Perhaps the most significant change in the 1992 Needs Survey from earlier assessments is in combined sewer overflow control needs.

In cities where sanitary sewage and storm runoff flow down the same pipe, as in Philadelphia, overflow pipes are used to prevent the treatment plant from being swamped during heavy rain storms.

EPA recently issued a final policy document which provides the framework for controlling the water quality impacts from CSOs. This will be expensive. EPA has identified costs for controlling CSOs of about $42 billion. Others would estimate CSO control needs at much, much higher levels.

The City of Philadelphia, for example, has estimated almost $25 million will be needed through 1998 to address their CSO problems. Millions more will be needed to control stormwater runoff. With the new CSO policy, the city's ultimate cost, I feel, will be many, many times this amount.

Let me emphasize that there are other unaccounted and unplanned construction needs which are not reflected in EPA's assessment. In particular, significant financing soon will be needed to rehabilitate and replace existing municipal wastewater treatment facilities. Many of the facilities built during the early years of the Clean Water Act are now nearing the end of their useful life. During wastewater treatment, all the equipment works in a very hostile environment and the equipment does not last very long.

Significant funding also is required to operate and maintain treatment facilities. The Water Environment Federation recently surveyed publicly-owned treatment works or POTWS, of all sizes about their wastewater treatment chemicals, engineering services, and equipment needs for the next two years.

A copy of this report one has been provided to the staff. I would ask that it be included in the record.

Mr. GUARINO. This survey found the total needs for ongoing treatment efforts to be about $1.9 billion for 1994, and $2 billion for 1995. I would stress these needs do not represent new facility construction. They only represent one part of operation and maintenance funding needs for the 15,700 POTWS we have in this country.

Other significant costs include personnel salaries and power. And power in the case of wastewater treatment is very expensive. In a city like Philadelphia, the water department has a budget of $20 million for power alone. The survey estimates that demand from

new facilities would increase the need for the treatment products by up to 15 percent annually.

Now, based on the current rate of growth, this area of need will almost double to $3.7 billion per year by the year 2014.

To put it another way, wastewater treatment product needs will add over $52 billion to the new construction needs identified by EPA.

Mr. GUARINO. Once again, these figures do not include budget items such as salaries and benefits for treatment plant personnel as well as power, which is very expensive.

Who is paying the bill for this? Both the WEF survey and a recent survey of new construction financing by the Association of the Metropolitan Sewerage Agencies revealed that the vast majority of funding comes from local rate payers. Less than 30 percent of the funds come from State Revolving Funds or other Federal, State, local or private sources.

Clearly, wastewater infrastructure needs are huge. They will require significant expenditures in order for municipalities and others to maintain compliance, not only with present clean water program requirements, but also for future requirements.

The third major issue that is critical to understanding our wastewater infrastructure needs is the necessity for improved scientific knowledge to ensure sound risk-based regulatory decisions. A simple way of saying that is we should know more about what we are doing and the more we know, the better we can do it and the cheaper it will be.

Now, once these decisions are made, we must have new and better technologies to meet the water program requirements. Unfortunately, Federal support for water quality research has been cut drastically, and Federal support for innovative and alternative technology development has been phased out completely.

In recent years, POTWs have only been able to make limited investments in treatment technologies and research. Now, in an effort to help meet the need for better science and technology, POTWs, corporations and others, have come together to cooperatively meet these needs through organizations such as the Water Environment Research Foundation.

Further research and development of treatment technologies is critical to improved water quality and heightened cost-effectiveness. We, WEF, would ask that Congress support the research efforts of organizations like the Water Environment Research Foundation. A small investment in research today can provide the knowledge needed to meet current and future clean water regulations economically.

Mr. Chairman, efforts by Federal, State and local governments, as well as the private sector, have brought about significant improvements in the Nation's water quality during the last 20 years. But it is clear that additional funding and alternative sources of such funding will be needed to meet our Nation's commitment to clean water.

Congress, in partnership with the State and local governments and the private sector, must find viable mechanisms for meeting the Nation's wastewater infrastructure needs.

My written testimony previously supplied provides a number of current and potential funding options which should be considered. Such options include continued support for SRF capitalization, special assistance through grants or other mechanisms for small or disadvantaged communities, and removal of barriers to privatization. There are certainly other options to be considered.

I am going to leave you with the point that now is the time to decide how we are going to pay for our wastewater infrastructure needs. Wastewater infrastructure provides tremendous environmental, public health and economic benefits.

The Water Environment Federation specifically recommends that Congress and the Administration convene a forum on clean water funding and revenue alternatives. The purpose of such a forum would be to identify funding and revenue options in which all parties could agree. Such an agreement would provide for stable, predictable and adequate long-term funding to help protect and improve our Nation's waters.

The workshop approach could be similar to the negotiated rulemaking process that proved successful in developing EPA's CSO control policy. The Water Quality 2000 project, once again initiated by WEF, also successfully used this approach. WEF would be pleased to assist in congressional or administration initiatives in organizing and conducting such a workshop.

Addressing how we will pay for wastewater infrastructure cannot wait for the next Clean Water Act reauthorization cycle. And, Clean Water Act reauthorization cannot be delayed without seriously impairing our ability to maintain clean water. Clean Water Act reauthorization and resolving how we pay for needed wastewater infrastructure must take place during this session of Congress.

Mr. Chairman, this completes my statement. I would be happy and pleased to respond to the subcommittee's questions.

Mr. BORSKI. Thank you.

Mr. Bragger.

Mr. BRAGGER. Yes. Good afternoon. My name is Ted Bragger. I am pleased to participate in this hearing on behalf of the National Utility Contractors Association. My company, which is based in Warwick, Rhode Island, specializes in drinking water system installation and repairs.

My remarks this morning summarize my written responses to the questions posed by you, Mr. Chairman, in your letter of invitation. I have been in this business for 59 years and am president of the company now, which apparently is no big consideration, because I was running a backhoe yesterday. Anyway, I will try my best to answer your questions about the industry, as long as they don't involve installations prior to the Great Depression. Actually, many of the jobs I work on involve systems that date from the 19th Century.

First, a few words about wastewater and water supply needs.

Studies in this area have bloomed like roses for a decade, and every study concludes that the needs are great. My written statement focuses on two of these studies: The 1992 EPA wastewater collection and treatment study, which forecasts $137 billion in unmet needs over the next 20 years, and a 1991 Clean Water

Council report, which forecasts $79 billion in combined wastewater and drinking water needs for the year—for the eight-year period from 1993 to the year 2000.

So much for the numbers. I am a believer in the notion that a picture is worth a thousand words. For this reason, you will either be pleased or dismayed to learn that I will assess that status of our water and wastewater infrastructure this morning with direct physical evidence.

Exhibit 1 on the easel is an enlarged view of a cast iron pipe that was taken out of service in 1992. As you can see, the 100-year-old water main is severely tuberculated. Mineral deposits have formed a barrier that restricts water flow through the pipe. This is a common occurrence in pipe that was installed prior to the late 1930s.

But failure to repair or replace the pipe poses serious public safety and environmental problems. Restricted flow requires the expenditure of additional energy resources to maintain capacity and pressures.

One system I worked on after they cleaned and worked on their pipes reduced their energy costs by 40 percent, which was a substantial amount. Restricted flow also impedes the community's fire protection. Tuberculated pipe such as the one that is shown here restricts the flow of water to a fire hydrant. In the case like the one that is shown there, it would be able to have possibly one hose with a full pressure. If you hooked another two-and-a-half-inch hose on the other side of the fire hydrant, your pressures would drop. You might get half the flow-through, and instead of saving the house, you are going to save the foundation.

Also, I have brought with me a four-inch diameter pipe encased in lucite so you can see for yourself the extent of tuberculation and the restricted flow in that pipe. This is the piece of pipe that I brought. This was taken out of service in the fall of last year.

Tuberculated pipe such as this one through a fire hydrant, as I mentioned, would really reduce the pressure. As you can see, the two-and-a-half-inch hose would probably take all of that pressure, but two of them would never make it.

Exhibit 3 is a photograph of a sanitary sewer overflow that recently occurred in a Massachusetts community. I would like to pass this around, if I might. If you look closely in the foreground you can see raw, untreated sewage and the accompanying debris spewing from the sewer. This is a public health and environmental disaster.

The pipes are too small to handle the flow after a heavy rainfall, thus the type of situation would not have occurred if a combined sewer overflow program had been in place.

You can imagine your children coming across a situation such as this, and it is not an uncommon occurrence. There have been cases in Rhode Island such as where a moratorium was placed on sewer hookups due to the inadequate treatment facilities. This impacts the whole community because it stops growth and thus restricts the tax base and possible jobs.

Our failure to build, replace and maintain water main and wastewater facilities is clear from these exhibits. Less obvious are the economic consequences of failing infrastructure and the resulting improvements from public investment.

The economic prosperity of the country as a whole is dependent on safe and affordable water supplies. A 1991 study commissioned by NUCA for the Clean Water Council demonstrated that labor productivity and private investment in plant and equipment increase as a result of water and sewer investment. The study also showed that a one-time investment of $2.5 billion pays for itself over a ten-year period in the form of expanded tax base.

Another study recently prepared for NUCA showed that as many as 57,000 jobs are created for every $1 billion invested in water and sewer facilities. These are good paying, skilled jobs. The study also revealed that only half the jobs generated by water and sewer investment are directly or indirectly related to the construction activity. The remaining jobs that are created reflect permanent employment opportunities that accrue when a community replaces aging water infrastructure and builds new facilities. What better way to immediately reduce unemployment.

There are a number of recommendations I would like to set forth, but I must remind the Chairman and members of the panel that I am not an economist or an expert on congressional budgeting. What I can tell you is based on my experiences in the field.

The fact is that environmental infrastructure, more than any other form of Federal infrastructure, has suffered the greatest cuts in funding. During hearings held last year by the House Water Resources and Environment Subcommittee, NUCA recommended that Congress reauthorize the clean water SRF program at $5 billion annually through the end of this century. This is an ambitious, but realistic assessment of Federal funding needs based on what the States are expected to invest themselves and projected infrastructure deficit levels. Nevertheless, for fiscal year 1994, we are chugging along at $1.2 billion for the clean water SRF program.

It is obvious that Congress cannot sustain the necessary level of appropriations each year to meet this country's growing water and wastewater infrastructure deficit. For this reason, NUCA recommends that Congress pursue the study and the eventual creation of a Federal dedicated revenue program to fully or partially fund necessary investments.

Ideally, the generated funds would have to be earmarked for wastewater infrastructure and be tied to the user fee concept. One option would be the creation of the Federal trust fund, like the existing highway trust fund, which generates revenue from fees on water consumed or wastewater discharged. One-time hookup fees, permits or wellhead taxes are among other options.

The surveys show that people are willing to pay for programs like this because they know their money is being spent on something that provides a direct, visible benefit. If these options are put in place, then monies over the long haul could rectify some of these problems, but for the immediate needs, they could not handle it. Thus, the need for Federal funding from general appropriations.

Finally, NUCA recognizes that the subcommittee and the full House Public Works and Transportation Committee is committed to reauthorizing the Clean Water Act this year. It is imperative, in our view, that differences over the proposed legislation be resolved in a timely manner. Otherwise, we are generally concerned about

continued appropriations for the clean water SRF program in fiscal year 1995 and beyond.

The competition for scarce Federal dollars in the Appropriations Committee is fierce, but without authorization in place, the clean water SRF program is in grave danger.

The same scenario holds true for the pending authorization of the drinking water construction financing program. States and municipalities can no longer shoulder the total cost of providing safe water supplies. NUCA recommends that $2 billion annually be authorized for a drinking water SRF program. The EPA is already holding $600 million in previously appropriated funds to establish the new program. We just need an authorization to get these funds out, or I should say under, the streets.

Thank you, Mr. Chairman, for providing me with an opportunity to share my experiences and recommendations. I will be pleased to answer any questions you or any other members of the committee might have. Thank you.

Mr. BORSKI. Thank you.

Mr. McElwee.

Mr. MCELWEE. Good morning, Mr. Chairman. My name is Scott McElwee with McElwee-Scarborough Construction Corporation. Our company, based in Gibbsboro, New Jersey, builds water and wastewater treatment facilities in both the public and private sectors, as well as other heavy highway construction projects.

As chairman of the Associated Builders and Contractors' National Infrastructure Committee, I appreciate this opportunity to testify on the state of our Nation's water infrastructure needs.

ABC represents over 16,000 contractors, subcontractors, material suppliers and related firms. Our diverse membership is bound by a shared commitment to the merit shop philosophy of awarding construction contracts to the lowest responsible bidder, regardless of labor affiliation, through open and competitive bidding, assuring taxpayers and consumers the most value for their construction dollar. With 75 percent of construction done today by open shop contractors, ABC is proud to be their voice.

ABC believes inadequate and insufficient wastewater treatment facilities represent a large segment of the clean water problems facing our Nation today. According to the Environmental Protection Agency, there is a need for over $100 billion to meet current wastewater treatment demands, and this will likely continue to rise.

Unfortunately, the $18 billion funding level committed to in the 1987 act to capitalize State revolving funds has not been met over time. ABC believes the Federal Government must meet its original commitment and supports a $2 billion funding level through 1994 and maintained until 2000 to accomplish that goal.

Currently, the Federal Government's participation in providing funding to the States for wastewater treatment needs is scheduled to end in 1994. At this critical juncture in our Nation's clean water history, we believe a complete cessation of Federal funds to the States for this vital environmental infrastructure need would be devastating. States simply have not been provided enough time or seed money to sufficiently capitalize their revolving funds.

There are also many small communities which do not have the capital base necessary to support a State revolving loan fund. In addition, there are a number of other serious and growing threats to clean water, which we believe can be addressed by funding a continuing water program.

ABC also supports continued Federal funding beyond 1994 to further capitalize State revolving funds for the construction of wastewater treatment facilities or other environmental infrastructure projects. Clearly, our clean water needs are vast, and the Federal Government must maintain a certain level of participation.

Shifting resources to State revolving funds to provide a self-sufficient program and stable revenue source is a productive use of Federal funds. Requirements for State revolving funds should be as uncomplicated as possible to facilitate an accessible and efficient program. ABC urges Congress to rely on market incentives rather than pursuing taxes to induce environmental conformance.

In addition, any funding plans should consider that States will have to impose user fees to meet their share requirements. The Davis-Bacon Act unnecessarily raises the cost of Federal construction by an average of 5 to 15 percent, with costs in rural areas being inflated by as much as 25 to 38 percent. This is a needless waste of taxpayer dollars and thwarts the progress of additional projects that could be built.

The Federal Davis-Bacon law hurts States and localities because its requirements are imposed regardless of the amount of funds that the Federal Government brings to that project. For example, the Federal Government could offer a small amount of money for a primarily State, local or privately funded project and the artificially inflated Davis-Bacon wage would have to be paid to all workers on that job. Oftentimes, these increased costs virtually nullify the Federal contribution. The Federal Government should not impose Davis-Bacon requirements on already financially strapped State and local governments.

An issue which is raised in the administration's recommendations for reauthorization of the Clean Water Act prohibiting the use of chlorine and chlorinated products is of particular concern to ABC members. The Environmental Protection Agency has asked Congress to authorize the agency to conduct a study which would result in identifying ways to prohibit, reduce, or substitute the use of chlorine and chlorinated compounds in industrial settings, publicly owned treatment works, and drinking water systems within the next three years. Such a plan could have profound effects on the operation of many diverse segments of American industry, on local governments, as well as on our overall quality of life.

Chlorine and chlorinated products play a significant role in public health, particularly water disinfection. According to the World Health Organization, some 25,000 children in Third World countries die every day of diseases carried by dirty water. Chlorine used as a water disinfectant has virtually eliminated the threat of waterborne diseases, including cholera, typhoid, and dysentery in the United States and Canada. In fact, drinking water chlorination is among the key public health measures responsible for increasing life expectancy in the 20th Century.

As required under the Federal statute, the Safe Drinking Water Act, residual amounts of chlorine remain in the drinking water from the treatment facility to consumers' taps, thereby preventing the regrowth of pathogenic microorganisms.

Along with providing wholesome drinking water, chlorine is a key disinfectant used to clean sewage and industrial effluent. The primary objective of water disinfection is to eliminate waterborne disease by destroying disease-causing microorganisms.

Since the early century, chlorine has become the predominant disinfectant in potable water treatment operations ranging from rural systems to major cities. It destroys a wide variety of disease-causing microorganisms. It is easy to measure, apply and control; it is relatively inexpensive and it disinfects throughout the water system.

More than 95 percent of disinfected water effluent is treated with chlorine or chlorine-related compounds. According to industry sources, if other products or processes had to be substituted for chlorine, the net cost to U.S. consumers could exceed some $90 billion per year. Arranging for substitutes and plants to make them would cost nearly $60 billion and the transition would take up to 20 years.

Should the use of chlorine and chlorine-based products be banned in the treatment of water and wastewater, communities would be faced with installing unsound, unproven and very expensive water and sewer treatment processes. Chlorine is tried and tested in the United States and is the best and most proven disinfectant that completely eliminates bacteria from wastewater and drinking water. Prohibiting the use of chlorine and chlorine products for use in purification would not only jeopardize health but also place an undue financial burden on metropolitan water authorities and water supply providers.

In sum, ABC strongly supports the efforts being made by the Public Works and Transportation Committee to ensure that our Nation's water quality is improved. We believe that with full funding, the reform of the Davis-Bacon Act, and the continued use of proven water purification technologies, our water infrastructure needs will begin to diminish and our Nation's water quality will drastically improve.

On behalf of the Associated Builders and Contractors, I again want to thank you and members of the Subcommittee on Investigations and Oversight for the opportunity to testify here today. And I will be happy to answer any questions you may have.

Mr. BORSKI. Thank you very much.

Let me thank each of you for providing that testimony for us, and a special welcome to Mr. Guarino, who is such a distinguished Philadelphian. It is a pleasure to have with us today.

The Centers for Disease Control have estimated that 900 deaths occur each year due to waterborne organisms. Do you know how many of these are due to inadequate infrastructure? Could anybody venture a guess on that?

Mr. GUARINO. Can you repeat that question, please?

Mr. BORSKI. This was raised by Mr. Barca earlier. There are 900 deaths a year due to waterborne ingestion. Any idea why that hap-

pens, where it happens, or the cause of it? Is it because of inadequate infrastructure in any way?

Mr. GUARINO. That is a too general question. I don't think you can answer that. It could come from inadequate treatment and again it could come from gosh knows what, contaminated articles, not washing, and when he asked the question, I can't answer it with any more information.

Mr. BORSKI. Anybody else want to venture a guess?

Mr. BRAGGER. I would concur with him. You notice that the pipes, they are contaminated in a sense. They will create sickness, stomach troubles and what not. I don't think death would occur from this, but there is always a possibility that something could come through the water supply, whether there be something in the reservoir.

Another possibility would be on a water leak, a water line is broken. If you don't—and they usually don't chlorine the line when they put it back together.

Let's assume the worst scenario. You are next to a sewer pipe. In excavating for the water main break, you break the sewer pipe, the two get intermingled and then when the water is turned back on, that effluent is in the water main. If it is not properly flushed, yes, I would say that it could probably cause death.

Mr. BORSKI. Mr. Guarino, let me ask, you note that it is unfortunate that the innovative and alternative treatment assistance program was eliminated when the construction grants program ended.

Mr. GUARINO. Yes.

Mr. BORSKI. Do you think that the requirement that the proposed treatment plant products meet accepted engineering standards tend to discourage use of innovative and alternative technologies?

Mr. GUARINO. Yes, I do. In fact, it is more than that. No one can afford, no one operating a city utility can afford to do research on his own. And it was a very good program. What it said was if you had a good idea and if EPA approved, you could try it, and if it didn't work, why, they would pay back the money. But without that, no one can afford to do research and that should be done, in my opinion, by the Federal Government.

Mr. BORSKI. You state that EPA's needs survey doesn't include some needs. For example, to rehabilitate and replace existing treatment facilities.

Mr. GUARINO. Yes.

Mr. BORSKI. Do you have any estimate of these uncounted needs and what would be the consequences of not meeting these rehabilitation replacement needs?

Mr. GUARINO. Well, the estimate is quite high, because as I mentioned when I was deviating from the text a little bit and I said that we are dealing with a very hostile environment. It is even different than water treatment. Water treatment is relatively easy in comparison to wastewater treatment. The pumps last longer, it is cleaner to operate and cleaner to work with.

Wastewater is very corrosive, very hostile, and whatever you are using, pumps, et cetera, they don't last a year or so and then you have to replace them. So that I think that the way you have to attack it is that—the way have you to look at it is that in 20 years,

those treatment plants have to be redone, and I think we are going to see the beginning of this very, very shortly, and that is going to be a very, very heavy price tag.

Mr. BORSKI. Mr. Guarino, and Mr. McElwee, Mr. Bragger has suggested the creation of a Federal trust fund for drinking water and wastewater infrastructure financed by wastewater user fees. What is your reaction to that proposal?

Mr. BRAGGER. Of course any funding is welcome, no matter where it goes.

Mr. BORSKI. I am sorry. I referred to your colleagues on the panel. I know you are for it.

Mr. GUARINO. This is the fund where you want to raise money from the user?

Mr. BORSKI. Yes.

Mr. GUARINO. Well, WEF checked into this, and it doesn't have an opinion on that. But to me, you are doing the same thing, you are raising the cost directly to the user. And personally, I think they should find other means.

Mr. BORSKI. Mr. McElwee?

Mr. MCELWEE. The ABC would support such a trust fund as long as the revenues from this trust fund were used exclusively for the improvement of the water quality of this Nation.

Mr. BORSKI. You are not suggesting that we have trust funds here that aren't used for their intended use, are you, sir? You don't have to answer that.

Mr. MCELWEE. I am just stating ABC's position. Thank you.

Mr. BORSKI. Mr. Bragger, do you know whether State and local governments support your proposal to create a Federal wastewater and water supply trust fund?

Mr. BRAGGER. In Rhode Island, they deduct, I believe it is a cent and a half per thousand gallons. Part of this goes into a fund that is loaned to various communities that are in need, and the rest is going to general funds. It is not enough, but it is worth quite a lot. I believe that even a nickel a gallon or a nickel every thousand gallons, rather, would create funds that would roll over into a loan program. It is not going to be enough to handle the situation, but it is a start.

Mr. BORSKI. Mr. Bragger, you said in your testimony that annual Federal spending should be $5 billion for wastewater infrastructure and $2 billion for water supply. If Federal funding continues to fall short of these amounts, can State and local governments afford to make up the difference?

Mr. BRAGGER. I don't think so. Most places are really strapped for cash, at least most places in the New England area that I know of. One town, as a matter of fact, they just took it over in Chelsea, Massachusetts, I think you saw it on 60 Minutes, where the town went bankrupt. They just didn't have the money. There were extenuating circumstances, of course, but for the most part, taking education in mind, that is a big, a big deduction from the tax roll, people just can't afford to pay more taxes and consequently they just don't have the wherewithal to repair the infrastructure.

No, I don't think that the cities and towns can afford it any more. I think they could go for a loan program, a long-term loan program with a low or no-interest rate. I think that would be a

thing that could be done, and I think they would go for it. But most of them are strapped now to the—where they just can't bond realistically, you know, by getting into a class B or a class C bond, and they just can't afford to pay the interest.

Mr. BORSKI. Mr. McElwee, in your testimony you criticized the administration's proposal for a study of the potential for reducing chlorine use. Do you think there are any areas where chlorine use might be reduced?

Mr. MCELWEE. Where it might be reduced?

Mr. BORSKI. Yes.

Mr. MCELWEE. The ABC hasn't studied the technological aspects of reducing chlorine in industry. My expertise is in the wastewater treatment and water filtration industry, and of course through my experience, I go out and I see that every wastewater treatment plant and water filtration system, with very small exceptions, uses chlorine.

We certainly would not be against any type of study that would attempt to find out exactly what these by-products of chlorine are doing to the environment, and of course the next step would be some type of cost benefit analysis to determine whether the levels of these contaminants are in fact having any effect on the environment at all and whether the cost of these new technologies would be worthwhile.

I testified about a month ago in front of the Investigations and Oversight Committee of Space, Science and Technology, and the mayor of Dallas was there, and he had testified that Dallas was directed to replace one of its chlorine units and change it over to ozone treatment, which is one of the alternate technologies, and that it had to spend $80 million.

Mr. BORSKI. How much, sir?

Mr. MCELWEE. Eighty million to update one-third of their treatment system, and he was questioning whether there was a valid reason scientifically for them to have to do that.

Mr. BORSKI. And what was the answer to that? Did he get one?

Mr. MCELWEE. No, sir.

Mr. GUARINO. If I could supply some information about that, and that is the research foundation, the Water Environment Research Foundation thinks that is a good research project, that we can limit the chlorine, and we are looking into it now and we expect to make a research project out of that.

Mr. BORSKI. Good. Did anyone want to add anything? Mr. Bragger, yes, sir.

Mr. BRAGGER. Yes, I have a couple of things. I forgot to mention that the sewer collapse in Atlanta, there were a few deaths in that because of a collapsed sewer, the infrastructure was so aged.

And another thing, on the funding, that a nickel for every thousand gallons would cost a household in the neighborhood of $5 a year.

Mr. BORSKI. Five dollars?

Mr. BRAGGER. Five dollars per year. It is a minimal amount for the amount that it could help.

Mr. BORSKI. How much money would it raise?

Mr. BRAGGER. It would raise, depending of course upon the amount of—I have the figures here, I believe, if not, I will get back to you, sir.

Mr. MCELWEE. Getting back to the chlorine issue——

Mr. BORSKI. Just a second. Let me just finish this, and we will come back to you.

Mr. MCELWEE. Sure.

Mr. BRAGGER. A nickel would generate over $6.2 billion for the trust fund. That is over about an eight-year period, from 1993 to the year 2000.

Mr. BORSKI. Mr. McElwee.

Mr. MCELWEE. I apologize for my interruption.

Mr. BORSKI. That is all right.

Mr. MCELWEE. Getting back to the chlorine issue, our problem with the study that has been directed by the EPA is that they have defined an objective in their study of banning this—leading to the ban of chlorine as opposed to a study leading to more information that could be used for practical purposes.

Mr. BORSKI. Thank you very much. We appreciate your testimony. It has been very helpful.

Mr. BORSKI. Our fourth witness today is Mr. Erik Stromberg, Executive Director, American Association of Port Authorities.

Mr. Stromberg, could you please rise and raise your right hand sir, please.

[Witness sworn.]

Mr. BORSKI. Thank you, sir, and welcome. Let me remind you that your full testimony will be made a part of the record.

TESTIMONY OF ERIK STROMBERG, PRESIDENT, AMERICAN ASSOCIATION OF PORT AUTHORITIES

Mr. STROMBERG. Thank you very much. I have a brief statement which I will read and then obviously I will be happy to answer any questions.

AAPA represents public ports throughout the hemisphere, but today my testimony will reflect the views of our 82 U.S. members.

I would like to recognize and thank you, Mr. Chairman, for your leadership in holding this hearing. Thanks for inviting AAPA to testify.

As you are aware, seaports are a critical link in our intermodal freight transportation chain. It is a fact documented regularly by the U.S. Department of Transportation. However, despite these enormous economic benefits, the critical role that seaports play in intermodal freight transportation movement, as well as our national defense system and interests, ports are too often forgotten as we look at priorities for funding Federal infrastructure and transportation.

Our needs fall in three general areas: terminal facilities, landside access, and waterside access.

Terminal facilities have historically been funded by the ports themselves. On the landside, access has been assured by the Federal Government, with funding funneled through State and local government under ISTEA. Adequate waterside access depends on maintenance and periodic improvements to our deep depth channel navigation system.

Since 1986, non-Federal sponsors have cost-shared the cost of new work, and maintenance dredging has been paid for 100 percent out of the harbor maintenance trust fund which is assessed through an *ad valorem* tax on shippers using our ports.

I should add that ports also pay for the costs of local access dredging, the lands rights-of-way, and easements for projects, and the increasing costs entailed by the construction of disposal areas. I would like to come back to that in just a little bit.

For ports, there has long been an obvious linkage between the three categories of intermodal infrastructure I mentioned. However, Federal policy has been slower to recognize that relationship. ISTEA was an important step, but as I will discuss, the promise of ISTEA remains unfulfilled.

You, Mr. Chairman, appreciate the need to coordinate Federal programs and policies affecting intermodal freight transportation. Secretary Peña has provided inspired leadership and made progress at the Department of Transportation. However, institutional constraints in Congress and other political and economic priorities at the State and local level present severe constraints to the ports.

In my view, it is important for Congress to understand and appreciate that, no matter how productive our marine terminals are, the U.S. port and intermodal freight transportation system cannot operate to maximum efficiency unless ports have adequate waterside and landside access.

On the issue of landside access, the U.S. ports support ISTEA and its recognition of the needs of the intermodal freight transportation system. We also support Secretary Peña's National Transportation System. I should note that your bill, H.R. 4305, which addresses some of our access concern, is viewed in a very positive light by the ports, particularly your requirement for a National Transportation System and the funding set aside for intermodal connections. We will certainly be happy to work with you as that bill moves through the legislative process.

However, for the ports, ISTEA implementation can be summed up by the expression, "Freight Doesn't Vote." The political reality at the local level is such that direct needs of passenger traffic are considered first and there is little or no thought to providing access to intermodal facilities handling freight.

We have proposed changes to ISTEA which are outlined in my written submission and we can go over those, as you see fit.

On the waterside, there is simply no substitute for dredging. We greatly appreciate the attention to the dredging issue, especially dredged material disposal, that was the subject of much discussion earlier this morning. Dredging at our ports is too often frustrated by inconsistent, complex and duplicative laws and regulation. In order to provide for a more coherent and consistent program for dredging and managing sediments, AAPA has proposed the implementation of a national dredging policy. I should add that the interagency working group effort is an important component of our overall proposal for a national dredging policy. We applaud Secretary Peña for his initiative in creating that group, as well as the other agencies who have participated in its deliberations. We look

forward to their options paper and the conclusion of their next series of outreach meetings.

But, we also want to highlight the need to reconcile the inconsistencies between the Clean Water and the Ocean Dumping Acts and we propose to revise revisions to the 1986 Water Resources Development Act that favor open water disposal over confined and upland disposal options. Again, we have provided the committee with specific recommendations, and we can go over those in greater detail.

However, among those recommendations, I would like to mention the issue of confined disposal facilities. We propose that there be established a comprehensive program under the WRDA clarifying a Federal responsibility for siting, construction and funding of confined and land-based disposal facilities for dredged material in connection with the construction of authorized Federal channel projects that does not meet criteria for open water disposal.

Ports are currently responsible for funding construction of any needed confined dredged material disposal areas. We propose that any confined disposal facilities and upland disposal sites that have to be constructed to accommodate dredge material associated with authorized harbor and channel dredging would be considered part of the total navigation project and, therefore, be subject to the cost-sharing requirements as any other part of the project. Dr. Zirschky mentioned this briefly in his remarks.

In sum, we look forward to working with the members of this subcommittee, and the full committee, as the Clean Water Act is considered in the coming weeks and months. I'd like to reiterate our need to implement a Water Resources Development Act of 1994. We certainly welcome Chairman Mineta's remarks in that regard.

Thank you, and I would be happy to respond to any questions.

Mr. BORSKI. Thank you very much, Mr. Stromberg.

You cite the problem of landside access not getting sufficient priority and decisions about how ISTEA money will be spent. Do you see any indications that the Federal DOT is prepared to insist on funding for these projects as part of its review of the State's transportation plans?

Mr. STROMBERG. Unfortunately, no. What we do see through Secretary Peña's remarks is an increased focus on the need for freight intermodal infrastructure. But the provisions of ISTEA are such that the ports have to deal with the State and local governments in achieving adequate funding for those landside projects.

Mr. BORSKI. Should a set percentage of surface transportation funding be allocated to freight projects that service ports and other transportation facilities?

Mr. STROMBERG. Well, that has been our view for a while, and certainly as ISTEA was moving through the process, that was the best way to assure that these projects would be funded.

As I indicated, it is a difficult situation for ports to compete against the interests of passengers. As you indicated, ports don't have the "glamor", the "star power", and these projects generally go through a number of different jurisdictions; they tend to be expensive, and again, they focus on freight, not passengers—at least not directly. One of the challenges for the ports is to make that

translation, to show that freight and passengers interests often can mix, and freight considerations actually would improve the overall passenger transportation environment. And here again, greater focus and leadership on the part of the Federal Government to and including a special fund would be, I think, most appropriate and appreciated.

Mr. BORSKI. How do ports make out with the MPO's? Do they have a voice on them generally or do they not have a voice generally?

Mr. STROMBERG. Well, quite often, and again I would say that this has changed over the last couple of years in a positive way in a couple of areas, but all too often the ports don't have a seat on the MPO. They are not invited to be a part of the deliberations. There generally is some commitment to consider, at some point, the needs of the port, the needs of freight transportation, but the invitation to sit at the table where decisions are being made is not often forthcoming.

Mr. BORSKI. Could you give us some examples of the type of landside access project that is not receiving sufficient funding under ISTEA and what are the consequences in these cases of the projects not being funded?

Mr. STROMBERG. Well, some of the issues are almost trivial in their scope. I mean, some of it is just simply signage, that ports have a difficult time getting adequate signage on Federal road systems to their facilities. So the benefits there are clearly quite high relative to the cost.

Some of the more contentious issues revolve around rail projects. You know, ISTEA, while its name indicates intermodal, we have seen the traditional highway constituents strongly represented in the funding of the individual projects.

So as we look at a composite transportation system in and around our ports, which includes rail, we can't implement that one piece of it. We can look at the highway side, but we can't implement or even plan for the rail side. And often that would alleviate a great deal of congestion on our road system.

On-dock rail is widespread on the West Coast and coming to be widespread on the East Coast. With the advantages of intermodal OCP (overland common point) cargos moving directly onto rail at the port to move 500, 1,000, 2,000 miles inland economically, funding rail access just makes a lot of sense. The amount of traffic that the port loads directly on rail, avoiding inner city traffic, helps passenger as well as freight interests.

Mr. BORSKI. Do you agree with the Corps of Engineers that our ports have channel depths that will allow them to compete in today's global economy well into the next century?

Mr. STROMBERG. I was struck by that. I think it would be more properly phrased that we have generally a system that allows us to consider the needs of the ports in terms of channel improvements into the next century. I mean, ports, as you know, stepped up to the mark and agreed to cost-share in 1986, and there was a large backlog of projects that then went through. We are still working at improving the process to create a more efficient and equitable arrangement with the Corps.

The environmental issues, though, have to be resolved. The processes that we are getting dragged down with, and were referred to this morning, need to be addressed. But I think in terms of identifying on the market base those projects that are needed, based on market-place considerations, if you will, as indicated by local cost share commitments (i.e., the willingness of local sponsors to contribute a significant 35 to 60 percent cost-share, that meet economic needs, we have a system in place.

But we need to have a water resources development bill every Congress, even if it is only a project or two in each bill. I know politically that gets to be a problem, but that is an important aspect that I can't overemphasize.

Mr. BORSKI. Mr. Stromberg, the Corps estimates in its testimony that construction of ports over the next 10 years would total $4.2 billion. Does that figure seem about right to you?

Mr. STROMBERG. Over the next 10 years? In terms of channel improvements? Does that include the disposal?

Mr. BORSKI. Construction needs. How does construction needs feel?

Mr. STROMBERG. If that is construction for dredging only, I would say that that is in the ballpark. The construction of disposal sites adds another element and whether or not that is in those numbers or not, I don't know. But that is going to be a growing cost in the future.

Mr. BORSKI. I have several other questions that I would have to submit for the record. We are running a little late and we need to get going and move them through, too. So let me thank you very much for coming in and giving your testimony.

Mr. STROMBERG. You are welcome. Thank you for the opportunity.

Mr. BORSKI. On our fifth panel, we have Mr. Berdon Lawrence, Chairman, Inland Waterways Users Board and President of Hollywood Marine, Inc.; Mr. R. Barry Palmer, Executive Director, DINAMO, the Association for the Development of Inland Navigation in America's Ohio Valley; and Mr. Chris Brescia, President, of MARC 2000.

Let me ask you all to rise, if I may, first and raise your right hands.

[Witnesses sworn.]

Mr. BORSKI. Thank you very much. Let me remind you again that your full testimony will be made a part of the record and we suggest that your oral presentation be limited to five minutes.

Mr. Lawrence, if you would proceed, sir.

TESTIMONY OF BERDON LAWRENCE, CHAIRMAN, INLAND WATERWAYS USERS BOARD, PRESIDENT, HOLLYWOOD MARINE, INC.; R. BARRY PALMER, EXECUTIVE DIRECTOR, DINAMO, THE ASSOCIATION FOR THE DEVELOPMENT OF INLAND NAVIGATION IN AMERICA'S OHIO VALLEY; CHRIS BRESCIA, PRESIDENT, MARC 2000

Mr. LAWRENCE. Good afternoon, Mr. Chairman.

My name is Berdon Lawrence, President of Hollywood Marine in Houston, Texas. We operate towboats and barges on the intarcoastal waterway. We operate about 100 towboats and 240

tank barges. I am also Chairman of the Inland Waterways Users Board for the last couple of years, and the Inland Waterways Users Board is comprised of 11 members from various parts of the United States to try to strike a geographical balance and also a balance of the cargo users of the waterways. That is, coal, farm products and petrochemicals and petroleum products.

Our job at the Inland Waterways Users Board is to balance the trust fund revenues against the expenses of the navigation system, and we are currently paying 19 cents a gallon in fuel taxes and that will go to 20 cents a gallon next year. Fifty percent of the expenses are paid by the trust fund and 50 percent by the Federal Government.

I think that the User Board has a perspective that I want to discuss with you today that I think is good news, and I think you will find it as a different message from what you have been hearing today.

What we have studied over the last few years is that at the current user tax level, there is enough money to fund the six projects and do the necessary rehabs in the time schedule that they need to be built.

Now, I am saying need, not necessarily the schedule that is being proposed by some groups. To accomplish this, the Corps must do two things: One is that they must embrace the new technology of design and construction that can dramatically reduce the cost of the projects. And, second, the Corps must be willing to stretch out some of the construction starts for a few years to allow the current funding mechanism to work. With the slow growth in the system that we are experiencing today, this delay will not create constraints on the system and some of these projects can be extended.

You will notice today on the panel a couple of my colleagues here represent various regional economic development groups. I think the perspective of the User Board and the operators is different than the members of the regional economic groups, and that is not meant to be a criticism, because without the regional economic development groups, we would not be here today. But I think what we are saying is that all of the needs can be accommodated through the present regime of user taxes at 20 cents.

We pay the user taxes and we are worried about the national priorities, so when I speak of stretching out some of these projects, I do not mean do not build them; I just mean live within the means that we have.

As you probably remember last year, we had the threat of tremendously increased user taxes. We had the threat of going from 20 cents to $1.20, and that would have dramatically impacted our industry and wrecked many of our customers.

We were able to defeat that tax, but we are constantly hearing that there were taxes being planned for the 1995 budget, and on and on. So we are constantly on guard because we know increased taxes will dramatically impact the true users of the waterways which are the people that use our services.

Where does that leave us today? Fortunately, we are confronted, we think, with six projects planned for construction over the next 10 years with flat and declining revenues from the trust fund, but we have enough money. The board is not opposed to this construc-

tion, and at the July meeting, we are going to lay out, and we will be happy to furnish you copies of this, the timetable for this construction.

But I think, first and foremost, our message is that we need to cut spending before examining the question of higher taxes. Let me give you an example of what I mean.

Mr. Norb Whitlock, the Senior Vice President of American Commercial Barge Line Company, has been leading a subcommittee that has been heavily involved in these new techniques to cut the cost of new projects.

By way of illustration, in the 1960s, Mr. Whitlock was a project engineer for the Corps in the Louisville district. His assignment was to build a temporary lock at lock and dam 52 on the Ohio River that was supposed to last eight years until the Olmsted project would be completed in 1978. This project was completed in 40 months at a total cost of $10 million. That lock has now been in service 24 years, has been operating well, has moved 50 to 60 million tons of commerce every year, and is going to be in service 35 years by the time Olmsted is put in place.

This is the type of change that we think that the Corps is going to have to embrace to really be able to build many of the projects. We recognize that many of the projects cannot have this dramatic type of impact. However, there are some tremendous savings to be made if some new paradigms will be approached.

Monongahela River 2 through 4 project, for instance, we are meeting with the Corps now as a user board, and the project started out as recently as a year, a year-and-a-half ago when we were talking with them about a $750 million price tag. Today they are speaking in terms of $400 million, and we think that some additional cost saving might be able to get that down to $275 to $300 million. I use those illustrations to show, what you can do.

We appreciate the Corps of Engineers' assistance in embracing these concepts, but we need to start applying these construction concepts today on the projects currently being considered, and we urge you to direct the Corps to evaluate and incorporate these new innovative design techniques as we go forward.

What are the future needs in this environment of slow growth? The U.S. Army Corps of Engineers Water Resources Support Center released its national waterways study in January 1983. The report noted that the waterways' infrastructure consisted of a progressively aging and more intensely used system and that overall traffic was expected to increase by 24 to 51 percent during the 25-year-period 1978 to 2003. This increase did not occur. We must, therefore, be extremely cautious about increasing costs and crippling our domestic industries.

Table 4 in my presentation shows data from the U.S. Army Corps' report from 1984 to 1993 for the system as a whole, and during this period growth was only at 0.8 percent, not the 5 or 6 percent that was expected. Tonnage went from 530 million tons 10 years ago to 580 million tons, not 840 million tons. So that really changes what is needed. Many of the congestions and bottlenecks that were anticipated simply have not developed.

The infrastructure system is not about to fall in the river, but it does require heavy and expensive major rehabilitation, and the

good news is that with the money that we have coming into the system today, we can do what is needed in that rehabilitation area.

So we think we have a different message in the fact that if innovative design is followed and some of the projects are delayed a little bit for a few years over the next 10 years, we can meet those needs.

I would like to talk a second about rehabilitation. The Inland Waterways Trust Fund agreed in 1992 to take on 50 percent of all major rehabilitation, and we are now building into our budget $40 million a year for rehabilitation. In 1994, we expect to raise $91 million into the trust fund. That is $83.7 million that will come from taxes and $7.3 million will come from interest generated on $198 million that we have in the trust fund.

If you interpolate out 10 years at $91 million, that is $910 million, or almost $1 billion coming from the trust fund. If you assume that the government will continue to match that 50/50, that is almost $2 billion that is coming into the trust fund, and that is enough money to do the rehabilitations that we need to do and to build the systems that needs to be built over the next 10 years.

What are the desires of the true users? Many companies today have to embrace what we call the formal quality process, and that is listening to our customers. The true beneficiaries of the waterways, Mr. Chairman, are the farmers, the coal miners, the petrochemical companies, petroleum refiners. The barge companies are really not the users, but we feel we are simply the facilitators for the users.

In order for these true users to be competitive in the global market, they must find ways to deal with the stiff competition which they confront in global markets. This requires placing the strongest emphasis on cost reduction.

The barge industry, along with our customers, strongly supports reductions in spending on navigation projects as already indicated and strongly oppose any increase in our diesel taxes that will tend to make our customers less competitive in the global marketplace.

In closing, I would like to emphasize three key perspectives from our industry. We need to, one, defer some of the construction starts. Due to our forecasts of continued slow growth, this can be done without impeding any traffic flows.

Two, we need to change the traditional culture of the Corps of Engineers. Due to the severe economic constraints, we must totally change the method that projects are built. We need to look at locks that will be built for 50 years and not 100 years or longer.

And, third, we need to look at a process where we have no increase in the user taxes above the 20 cents. Due to the extremely competitive nature of our global economy, we cannot afford to increase the cost to our customers.

We have the finest transportation system in the world, and we know with the user board and the Corps and the Congress working together, we can maintain that system. Thank you very much.

Mr. BORSKI. Mr. Palmer.

Mr. PALMER. Mr. Chairman, I am Barry Palmer, Executive Director of DINAMO, which is an acronym for the Association for the Development of Inland Navigation in America's Ohio Valley.

DINAMO is a nonprofit, membership-based, multistate coalition of private sector leaders, many of the same folks that Mr. Lawrence mentioned. But we also have the labor community and State government working very closely with us. The Governors of the States have appointed representatives to sit on our executive committee and board of directors launched in March of 1981 to overcome more than 20 years of neglect of capital improvements on the Ohio River navigation system.

DINAMO has worked closely with the Corps of Engineers at the district level at the Pittsburgh district, the Nashville district, the Louisville district and the Huntington district; at the division level in Cincinnati; and at the higher headquarters level here in Washington, DC.

We worked with the Corps of Engineers to get our critically needed improvements through the process and get them here so that you could authorize them for construction.

We worked with the Corps to streamline their process. We worked with them to execute their program management initiatives, and we are also working with them now, primarily really at the local level, at the district level, so that they can reduce the cost of these projects.

The primary framework for our lock and dam modernization objectives was the national waterways study which was completed in 1981. The study indicated that the greatest potential adverse impact of traffic is on the Ohio River system where as much as 65 million tons could not physically be passed through the locks. If the minimum forecasted traffic level is to be served by 2003, additional capacity will be needed at 14 locks.

We know we have gone through a recession in the 1980s, and changing economic conditions, but the fact is that the river has been a terrific economic generator over time; it is vital to the economy of our region, and we need to maintain it, we need to upgrade it, whether it is major rehabilitation or replacement.

I want to move to the map now, Mr. Chairman. I want to outline the needs that were identified in the national waterways study. This committee, not the subcommittee, but the water Resources Subcommittee and the full committee has done a terrific job in addressing our needs, and we have worked very, very closely with them over the last 13 years.

The national waterways study identified a number of projects that needed to be replaced or undergo major rehabilitation by the year 2003, and the first initiatives were taken with major rehabilitation of the three locks nearest to Pittsburgh: Emsworth, Dashields, and Montgomery Island locks and dams. These are the first three locks on the Ohio River. And the Corps invested about $100 million in rehabilitating those. So we think they are pretty good.

Then we went, and our first economic development priority in the region was the replacement of the Gallipolis locks, now the Robert C. Byrd locks and dam. And it literally opened the rivers for us in terms of these needed improvements. So you had Gallipolis, Point Marion lock on the Upper Monongahela River and Winfield down on the Kanawha River.

In 1988, we had the Olmsted project, over a $1 billion project which will replace two locks and dams. We had these projects authorized in 1988. In 1990, McAlpine, and then in 1992, locks and dams two, three and four on the Monongahela River. We hope you get a 1994 bill and we need to have construction authorization for the Marmet project down here on the Kanawha River and the Kentucky lock on the Tennessee River.

When we testified the first time before Mr. Roe's committee, we said we needed about $2.5 billion, and it is closer to $4 billion, so you know, you can look at the whole system, systemwide or the system nationwide, but when you get down to specific locks and dams, you got different problems. So why specifically?

These projects here, two, three and four on the Monongahela River, are over 90-years-old and the Corps doesn't know whether they are going to slide into the river. We want to start new construction in a year and we are working with the appropriations folks to try to get that done.

At Marmet, which is the second lock on the Kanawha River, we have got delays as much as 40 hours, delays as much as 40 hours for towboats to get through this facility, and when they get the Winfield project done in 1997 the problem just moves down to the Marmet lock.

So basically we have a pretty good system, but there are key places, situations, where because of their condition or their capacity, depending upon the project, we need a little help to spur this on.

These projects were started—some of these projects were started at the turn of the century, like the ones on the Monongahela River. Others were going on in the 1950s, and now we are really involved in completing the work that was started 40 years ago. And we have only been since 1986—the dedication of the locks, we have only been in the program six years. So it is very, very important, we believe, what you folks are doing in supporting us and to keep the process going. So we are using monies, that we agree to accept the additional taxes, and the barge guys agreed to that agreement, and we agreed with them. We are supporting the cost-sharing, we are trying to get the costs down.

The only other thing I think would be important is why are we in this thing? Why are private sector and the State government and the community working together in our region? It is because this river is really important. It is important to our economy.

We have 250 million tons of commodities, principally coal, moving on our system. We have 70 power plants, 60 of them are steam-fired, so the electric needs for the whole eastern half of the United States really are generated from near this river system. You've got 520 chemical plants manufacturing everything from feedstocks for industrial processes to medicines. Steel mills, terminals, export coal; it is the lifeblood.

And Mr. Lawrence talked about the user tax proposal last year, a buck a gallon. Well, if we just looked at the coal that moves on our system, we would have lost directly and indirectly about 33,000 jobs associated with that commerce that depends on the coal. So the issue of how we fund these improvements is very, very complex, and you will find out as you get more and more involved in

the issue. Because it is not just the tax on them, it is a tax on our region and, as Mr. Brescia will talk about, it is a tax on his region and everybody else's region.

So we thank you for the opportunity to be here today to talk about what we think is bread and butter to the Ohio Valley, Mr. Chairman. Thank you.

Mr. BORSKI. Thank you, Mr. Palmer.

Mr. Brescia.

Mr. BRESCIA. My name is Chris Brescia. I am President of the Midwest Area River Coalition 2000, which is based in St. Louis, Missouri.

Regrettably, illness precludes Mr. Schrodt providing the oral testimony. He asked me to be here in his place. I appreciate this opportunity.

Our testimony is in support of a growing need for future waterway infrastructure investments in the Upper Mississippi River and the Illinois waterway, otherwise known as the Upper Mississippi River System, which moves about 130 million tons of cargo.

MARC 2000 was formed only two years ago, Mr. Chairman, after careful consideration by a group of users from our region. What we found was that there was a need to develop an advocacy organization from our region that could support a program of sustainable development where planning for economic growth can also be balanced with preserving natural resources.

Our member companies and organizations generate over $100 billion in economic activity from the Midwest and conservatively employ or self-employ over 147,000 individuals in 20 States.

We represent a cross-section of interests from Minnesota to Louisiana. We are farm cooperatives, grain processors, shippers, terminal operators, towboat company construction companies, port authorities, a lot of the same mix that you find in DINAMO and other regional organizations. These are some of the entities that Mr. Berdon Lawrence referred to earlier as the true users, if you will.

Whether it is corn or soybeans from Minnesota, South Dakota, or Illinois or coal that is mined in Kentucky or fertilizer from Florida, what we have and what we wish to preserve and what we are here in support of is making sure that a cost-effective waterway system working in tandem with rail and truck feeder systems allow our part of the country to compete in a world market in the future.

We were formed because there is a growing concern that navigation infrastructure on the Upper Mississippi is obsolete and that our competitive advantage is at risk. We strongly believe that a modernized Upper Mississippi system is critical to our ability to compete in the future. In MARC 2000, you have historical competitors coming together in our region to make that point loud and clear.

We also believe that it is time to make it a regional and a national priority, that the time to wait and to put things off in the Upper Mississippi has come to an end and we must move forward aggressively.

An essential part of this system are 40 lock and dam sites. They support not only navigation, but have improved a quality of life for local communities by serving as an impetus for upgrading sewage

disposal, municipal drinking water systems in towns, limited power generation and recreation.

Many of the locks are aging and technologically obsolete. If we are going to grow in the future, we have a concern that we will exceed capacity by the year 2000. Without modernization, that means that the Midwestern section of our country faces dramatic consequences.

Some of these issues can be addressed through major rehabilitation efforts, and we support what has already been authorized and moving forward, but we believe that in the next 10 years we may be looking at an additional $225 million to meet critical demand, depending on worldwide manufacturers and traffic growth.

With the exception of three sites on the Upper Mississippi, locks were not designed to process large modern tows. The typical tow is about 1,100 feet and if you look very carefully at the left-hand side of the map, Mr. Palmer's map of the Mississippi River and the Illinois which he so graciously included, you will find that there are no dots, and that is because we really have had one completion.

That is Mel Price locks and dam, and Mr. Chairman, we are grateful for you lending your name to the dedication ceremony which will occur in June, and hope if the schedule allows that you will join us for that dedication.

Everything else would not even be planned improvements, because we have not had an aggressive system moving forward in the Upper Mississippi. These smaller locks, compounded with increasing traffic data initially show that it is costing the economy about $35 million a year in delay costs. And if we have limited growth, 1 percent, 1.5 percent over the next seven years, we are going to see that cost increasing to over $200 million a year. That is income that is taken out of the economy.

Based on initial reconnaissance studies, the Corps of Engineers suggests that some of these concerns can be alleviated through the addition of 1,200-foot locks to cut down the lockage time significantly, and we would expect that those construction needs are between $600 million to $1 billion over the next 10 years, assuming that the feasibility study bears out the initial predictions.

It is hard to predict beyond that. We are looking at a 50-year out period in terms of needs, and if worldwide market demand continues and the agricultural community is able to share in that growth, there may be an additional $1 billion needed in the Upper Mississippi, but we are hard-pressed to make that prediction at this point in time.

Previous testimony by Mr. Lawrence alluded to national priority analyses that are being conducted for the Island Waterway Users Board by the Corps. In each one of those analyses, the Upper Mississippi placed very high on top of the priority list for capacity improvements. Yet those projects are not reflected in data that was presented today, because we don't even have a feasibility study concluded yet.

Concurrent with modern navigation capacity needs may be enhanced support for ecosystem restoration projects. This is something that we don't know yet what the needs are going to be, but as the planning process is completed, we will have some additional information to render recommendations.

Mr. Chairman, we are squeezing as much out of the system in the Upper Mississippi as we can and we will continue to do so as long as we have to. We have also reduced projected costs. The $600 million to $1 billion that I alluded to ealier accounts for a reduction of initial project costs by 40 percent through innovative designs. Some of the technology that Mr. Lawrence alluded to and that Mr. Whitlock was very instrumental in outlining has already helped stretch our dollars.

In terms of funding sources, this is probably one of the most vexing problems. It has certainly been debated over the years. But I think that what has happened is that the sound premise that has existed behind Federal investment originally accepted by both Congress and the Executive Branch remains sound today.

Invariably, as we are looking for dedicated sources, we have lost a clear understanding of how the investments in the system pay back the economy in such great ways.

MARC 2000 continues to oppose raising the existing barge fuel tax until all users or beneficiaries have been asked to chip in, if you will. If the future is going to be away from Federal funding, then there needs to be some balance as to how this system is funded. However, we would suggest, and we make this point very directly, that if you look at the economic impact analysis, the major beneficiary of these waterway systems is the general economy.

We would also agree with Dr. Zirschky's comment that he made earlier that if you place a tax on the system, you reach a situation where our competitiveness in global markets is diminished. This is precisely the point that we made last year in opposing the $1-a-gallon fuel tax.

Mr. Chairman, to look at what we stand to lose, we would like to submit for the record a copy of an independent assessment that was provided to MARC 2000 by Price Waterhouse that evaluates the impact of our region on the Nation's economy. The results are not startling to this committee, but will be to those who have forgotten how regional and national benefits are derived from water resource projects.

The findings are rather dramatic. This analysis demonstrated that as many as 400,000 full and part-time jobs are affected by the traffic that moves on the Upper Mississippi system. These jobs generate almost $4 billion in individual income and produce anywhere from $11 billion to $14 billion in revenue to our economy. Personal and corporate income tax receipts exceed $700 million a year and play a major role in the delivery of services at both the Federal and local level, including fire, police protection, education, and much more.

Mr. Chairman, if I could, I would like that full report included in the record if it can be.

To look at very briefly, the report looks at four sectors.

Mr. BORSKI. Mr. Brescia, I hate to cut you short here, but I do want to remind you that your full text will be made a part of the record and ask if you could briefly wrap up. We have members of the panel who have travel plans that we are trying to accommodate.

Mr. BRESCIA. Be glad to, sir.

Very briefly, the Core sector, which is a lot of towboat activity, accounts for as much as 100,000 of those 400,000 jobs. The supplier sector which feeds that Core sector accounts for almost 18,000 jobs. The farming, the mining interests and so forth account for over 50,000 of those jobs and the largest beneficiary of the system is the general economy, the ripple effect, if you will. That accounts for almost 275,000 of those jobs. Those are Main Street USA impacts.

One of the other benefits of the system that we could stand to lose is transportation savings, and for States like Illinois which are impacted in a major way, if we lose the transportation savings on the Upper Mississippi, we are looking at a loss of gross wealth of about $8.6 billion. For States like Missouri and Minnesota, we are looking at $2.2 billion current wealth loss; Iowa, about $1.6 billion, to give examples.

The final consideration in terms of economic impact which we don't hear too much about is the environmental impact of a modal shift from water to other modes of transportation.

A study that was conducted in 1991 by the Minnesota Department of Transportation revealed significant increases of fuel consumption in a shift from water to rail, exceeding 250 percent. Emission exhausts exceeding 480 percent, probable accidents increasing 150 percent.

Finally, in conclusion, Mr. Chairman, we have a system, a transportation system that is the envy of the world. We also have in our region an agriculture production system that is the envy of the world. We stand to dramatically negatively impact both of those if we do not continue the type of leadership that this committee, full committee has exerted over the years in providing the type of investments that we need in the infrastructure to move on into the next century.

With passage of NAFTA and GATT, we are looking at significant opportunities for future export of agricultural products. With population increases projected, there is an opportunity there for U.S. agriculture that we have to support. We will continue to push for these priorities.

We thank you for inviting us today, and look forward to working with you in the future.

Mr. BORSKI. Thank you very much. Let me thank all three of you for your testimony today. It was very helpful for us. It will go a long way to helping our planning for our future needs.

And with that, let me adjourn the subcommittee hearing. Thank you very much.

Mr. BRESCIA. Thank you.

Mr. LAWRENCE. Thank you, Mr. Chairman.

Mr. PALMER. Thank you, Mr. Chairman.

[Whereupon, at 1:35 p.m., the subcommittee was adjourned.]

PREPARED STATEMENTS

SUBMITTED BY WITNESSES

NATIONAL UTILITY CONTRACTORS ASSOCIATION
4301 N. FAIRFAX DRIVE
SUITE 360
ARLINGTON, VIRGINIA 22203-1627
(703) 358-9300 FAX (703) 358-9307

Statement of A.E. "Ted" Bragger
President
National Utility Contractors Association

before the

Subcommittee on Investigations and Oversight
Committee on Public Works and Transportation
U.S. House of Representatives

May 4, 1994

Our Nation's Wastewater and Water Supply Infrastructure: Documented Needs Require Substantial New Federal Investment Funded by a Dedicated Revenue Source

CONSTRUCTORS OF WATER, SEWER AND UNDERGROUND UTILITY SYSTEMS

My name is Ted Bragger, and I am President of the A.E. Bragger Construction Co. located in Warwick, Rhode Island. Our family business was started in 1922, and I began working for the company in 1935 as a water boy. For the past twenty years, our company has performed specialized drinking water work, such as replacing valves on live water mains, replacing hydrants, and adding and removing chlorine during disinfection and flushing of water mains. I also serve as the elected President of the National Utility Contractors Association (NUCA), which represents the women and men who construct water and wastewater facilities and supply the equipment, materials, and services for construction.

It should be self-evident that the quality, availability, and cost of water affects the daily life of every American. It is frustrating that so much of the huge federal budget is considered more important to the present and future quality of life in this country than environmental infrastructure--basic wastewater collection and treatment systems and drinking water treatment and delivery systems. This Subcommittee is to be commended for its serious consideration of the problem. In the invitation to participate in this hearing, Chairman Borski and Representative Inhofe put forth five issues, addressed below.

Current Wastewater And Water Supply Infrastructure Needs

National wastewater and water supply infrastructure needs are well documented and alarming in scope. If Congress had fifty bucks for every recent study confirming enormous unfunded but essential environmental infrastructure

needs, it could probably appropriate money for thirty miles of new sewer collectors and a treatment plant or two. The evidence is clear and convincing.

In December 1991, the Clean Water Council published *America's Environmental Infrastructure: A Water and Wastewater Investment Study*. The study projected needs (estimated in 1988 dollars) over the period 1993–2000 using historical data.

At the upper bound, the states could have to finance as much as $167 billion in capital spending for water supply and wastewater facilities, while also trying to finance $196 billion in operation and maintenance spending. If current spending trends continue, federal and state funding for environmental infrastructure will total $88 billion, leaving an upper-bound shortfall of $79 billion between projected needs and investments for the eight-year period.

This estimate may be too high for two reasons: (1) Replacement estimates are based on a twenty-year life for capital equipment, yet some facilities, especially sewers, last forty to fifty years; and (2) the study assumes that full compliance with the Clean Water Act is achieved by the year 2000, consistent with U.S. EPA estimates at the time, but the process could be stretched out over a longer time.

On the other hand, the $79 billion shortfall, based largely on the 1988 U.S. EPA needs survey, is conservative because: (1) The data do not account for the

cost of stormwater regulations; (2) the estimate does not account for much of the potential cost to correct the combined sewer overflow problem (only $16 billion was identified by the U.S. EPA in its 1988 needs survey); and (3) the data do not include the costs of nutrient removal in many coastal, publicly owned treatment works, which are not explicitly in violation of the Clean Water Act but nonetheless are sources of low dissolved oxygen in receiving waters. In addition, many states now have budget deficits of their own and may reduce traditional levels of environmental infrastructure investment. Taking all these factors into consideration, we believe it is safe to assume that the net projected capital shortfall will be at least $50 billion between 1993 and 2000 (an average of $6 billion in needs per year above and beyond the federal and state investments).

We strongly recommend that the Subcommittee also consider needs projections conducted by the Association of State and Interstate Water Pollution Control Administrators, the Association of Metropolitan Sewerage Agencies, and the Association of State Drinking Water Administrators.

The U.S. EPA 1992 wastewater collection and treatment needs assessment merits special attention because it provides the most recent and thorough projections. The agency identifies $137.1 billion in documented and modeled needs over twenty years. The lion's share of this total is comprised of sewer needs ($39 billion), treatment plant needs ($46.8 billion), and combined sewer overflow

corrections ($41.2 billion). The agency is presently developing a similar assessment for water supply infrastructure needs. We understand that these needs amount to $10-12 billion annually.

In terms of wastewater collection and treatment, each of the relevant studies obliterates the popular misconception that the United States has adequately addressed its point source pollution problem. Despite impressive gains in point source pollution control, the decay of century-old facilities and population growth necessitate continued investment in this area.

The Economic Impact Of Failure To Meet Necessary Wastewater And Water Supply Infrastructure Needs

Failure to build and maintain adequate environmental infrastructure devastates commerce, government, and individual lives because water and wastewater facilities and a healthy economy go hand in hand. Specifically, treatment plants, pipelines, and related structures are a precondition for manufacturing, distribution and supply, retail business, agriculture, offices, schools, hospitals, all forms of housing, recreation, and just about every other institution that comprises modern civilization. Show me a nation with substandard or nonexistent water and wastewater facilities, and I'll show you a nation with a basket-case economy and horrendous standard of living. Think

about it for a minute. Consider the operation of your own household in the absence of affordable sewage collection and safe, plentiful drinking water.

Conversely, the positive economic ramifications of clean water investment substantially increase the value of a national priority that is otherwise wholly justified on public health, public safety, and environmental merits. *America's Environmental Infrastructure: A Water and Wastewater Investment Study*, cited earlier, persuasively documents three important economic effects of public investment in water and wastewater infrastructure. These findings give added urgency to new efforts to address anticipated shortfalls.

1. **Return to Private Capital**

   In a phrase, private-sector profitability. An increase in the stock of water and wastewater facilities has a modest but important impact on private-sector potential returns in the long run.

2. **Productivity**

   Higher public investment in water and wastewater facilities also increases output per worker. Productivity gains accrue to everyone. Resources become available to purchase homes, health care, and anything else associated with the general standard of living.

3. **Plant and Equipment**

   Increased public investment in this area also spurs substantial

private investment in new plant and equipment--machinery, trucks, office equipment, and the like. These assets are an important component of growth because they are used to produce other goods. They make labor more productive.

These three factors contribute to a better domestic economy, which means that American industry can also benefit from increased competitiveness in international markets. Furthermore, the findings suggest that substantial new tax revenues are generated by an increased level of public investment. A simulation model in the study, under a relatively conservative set of assumptions, concludes that a one-time investment in water and wastewater facilities of $2.5 billion is self-financing in less than a decade.

Environmental infrastructure also generates considerable employment opportunities. A 1992 report prepared for NUCA analyzed a number of public works studies published on the subject of job creation. The report concludes that the number of direct, indirect, and induced jobs generated per $1 billion (1991 dollars) invested in water and wastewater projects is at least 34,200 and could be as high as 57,400--figures somewhat greater than public works in general.

Finally, other benefits of environmental infrastructure investment, which tend to be viewed as non-economic, are vital and should be recognized: protection of the natural environment, public health, and public safety.

Funding Sources Currently Used To Finance

Wastewater And Water Supply Infrastructure Construction

Environmental infrastructure is financed through a wide variety of federal, state, local, and private fees, bonds, loans, grants, credit enhancements--to name those we are familiar with. A given facility or project may receive financing through one or more of these sources. Except in the case of public-private partnerships, members of our industry simply bid on funded projects when bids are solicited by project owners.

The primary sources of federal funding for wastewater collection and treatment are the U.S. EPA State Revolving Loan Fund Program and the Rural Development Administration (RDA) Grant and Loan Programs. The RDA Programs also provide funding for drinking water systems in small and rural communities. Water and wastewater treatment systems are also eligible for assistance from the Economic Development Administration, the Department of Housing and Urban Development Community Development Block Grant program, and the Appalachian Regional Commission.

Federal Funding Levels Needed To Adequately Meet

Future Wastewater And Water Supply Infrastructure Needs

The projected capital shortfall for environmental infrastructure will exceed

$50 billion between 1993 and 2000 if combined federal and state investment continues its historic pattern.

Based on this conservative assessment, at least $5 billion annually in federal funding is needed to address wastewater collection and treatment needs and $2 billion annually is needed to address drinking water treatment and delivery needs.

New Or Innovative Ways To Fund

Wastewater And Water Supply Infrastructure Needs

Rebuilding the Foundations, a 1990 report by the Office of Technology Assessment, includes a salient observation in its first chapter: "Over the past decade, only highway and air transportation received increasing portions of total Federal funds spent on infrastructure, thanks to trust funds supported by dedicated user fees . . . . The fact that no similar dedicated Federal revenue sources have been enacted for environmental programs has had a significant impact. In 1980, 20 percent of Federal grants for public works infrastructure was budgeted for water quality programs, while 80 percent supported transportation. By 1988, funding for water quality had dropped to 10 percent. Concurrent with the drop in Federal appropriations, local costs for complying with Federal environmental standards began to increase as new standards began to take effect."

NUCA strongly supports the study and subsequent creation of a federal revenue generating program targeted directly to water and wastewater infrastructure projects. It is apparent that increasingly fierce competition for appropriations from general revenues necessitates a new dedicated funding source. The funding source must generate sufficient revenue to meet documented needs in perpetuity. The funds generated must be earmarked for water and wastewater infrastructure exclusively. The funding source must also be tied to water use, consistent with the concept of a user fee.

For example, one option would be the creation of a federal trust fund independent of federal budgetary constraints and therefore less vulnerable to deficit-reduction measures. Analogous to the Highway Trust Fund, this fund's revenues could come from user fees based on gallons of water consumed and/or wastewater discharged. One-time hook-up fees or permits for new construction are another option. People are willing to pay for programs like this because they know their money is being spent on something that provides them with direct, visible benefits.

It might work like this. Using data from the U.S. Geological Survey, total public-service water withdrawals in 1985 were approximately 36,152 MGD (million gallons per day). A special trust fund fee of five cents per 1,000 gallons would generate over $650 million for the trust at 1985 consumption levels.

Assuming a modest annual compound growth rate of 1.5 percent in water withdrawals, approximately 125 trillion gallons of drinking water would be consumed during the period 1993-2000. The nickel fee would generate over $6.2 billion for the trust over that period.

Representative Bob Franks (R-NJ), a member of the Committee on Public Works and Transportation, will introduce legislation in the near future directing the U.S. EPA to conduct a study to identify future funding options for clean water infrastructure projects. The agency would report the results of the study to Congress within one year of enactment. Representative Franks seeks to incorporate his bill, which authorizes $100,000 for the study, into H.R. 3948. We encourage all Members of Congress to support this necessary first step.

We also direct the Subcommittee's attention to a 1992 U.S. EPA report entitled *Alternative Financing Mechanisms for Environmental Programs*. This document discusses dozens of alternative financing mechanisms, including potential dedicated revenue sources, that could be used to fund water and wastewater infrastructure. Examples include utility charges, sales taxes, fertilizer taxes, connection fees, septic tank fees, feedstock taxes, marine fuel taxes, and watercraft sales taxes.

Finally, NUCA recognizes that this Subcommittee and the full House Public Works and Transportation Committee is committed to reauthorizing the Clean Water Act this year, with a strong infrastructure investment provision. The bipartisan legislation introduced by Chairman Norman Mineta and Representative Boehlert (H.R. 3948) is a winner in this respect. It is imperitive that differences over the proposed legislation be quickly resolved. Otherwise we are genuinely concerned about appropriations for the wastewater SRF in fiscal 1995 and beyond.

The same scenario holds true for the pending authorization of a drinking water SRF. Previously appropriated funds amounting to $600 million are held in limbo pending establishment of this necessary program by September 30.

In both cases, Congress must hammer out strong bills in the coming months. After years of analysis and over 10,000 pages of public hearing transcripts on the Clean Water Act alone, it is time for action.

Please let us know what we can do to help. Again, I thank the Subcommitee for providing me an opportunity to share my experiences and recommendations on behalf of NUCA.

Statement of Carmen F. Guarino

On Behalf of the Water Environment Federation

Before the Subcommittee on Investigations and Oversight
Committee on Public Works and Transportation
U.S. House of Representatives
Washington, D.C.
May 4, 1994

On National Wastewater, Water Supply, Port Development and Inland Waterway Infrastructure Needs

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Mr. Chairman and members of the subcommittee, I am Carmen Guarino. For 30 years I served in various capacities for the Philadelphia Water Department, the utility which is responsible for water and wastewater service for the City of Philadelphia, including eight years as commissioner. Since retiring in 1980, I have done extensive consulting in the design, construction, operation and management of municipal wastewater, water, biosolids, and industrial pretreatment facilities and programs throughout the U.S. and abroad. I currently am chairman of WRc inc/Guarino Engineers. I am a registered Professional Engineer, certified wastewater treatment plant operator, and diplomate of the American Academy of Environmental Engineers.

I appear before you today as a past President of the Water Environment Federation, an international organization of professionals dedicated to improving water quality.

The private and public benefits of enhancing wastewater as well as water supply infrastructure have been well documented. [1] Efforts by the federal, state, and local governments, as well as the private sector, have brought about significant improvement in the nation's water quality during the past 20 years. ***Clean Water Act requirements, however, are increasing at a time when the availability of federal financial assistance is decreasing. Reauthorization of the Clean Water Act, as well as the Safe Drinking Water Act, provide Congress with an opportunity to address the growing disparity between requirements and financial support.***

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[1] See America's Environmental Infrastructure: A Water And Wastewater Investment Study, Apogee Research Inc., for the Clean Water Council, December 1990; Testimony by David Alan Aschauer, Alicia Munnell, and others before the Senate Water Resources, Transportation and Infrastructure Subcommittee, February 5, 1991; and, A Report on Clean Water And Job Creation, prepared for the National Utility Contractors Association by Apogee Research, Inc., March 30, 1992.

Congress, in partnership with state and local governments and the private sector, must find viable mechanisms for meeting the nation's wastewater infrastructure and water quality program needs. Funding is needed for:

(1) pursuing further water quality improvements;

(2) meeting new clean water requirements;

(3) assisting small or disadvantaged communities;

(4) capitalizing the state revolving fund ("SRF") program; and

(5) supporting research for scientifically based regulations and improved process technology and understanding.

I would like to discuss current and future wastewater infrastructure needs in terms of three specific areas affecting Publicly-Owned Treatment Works (POTWs) which have resulted from passage of the 1987 Water Quality Act.

1. Major Increase In Clean Water Act Requirements

Local governments are, and have been for many years, subject to extensive Clean Water Act requirements. These requirements frequently result in the planning, design and construction of sophisticated new treatment facilities.

Initial CWA requirements, in 1972, for municipalities included:

(1) meeting technology-based secondary treatment levels;

(2) compliance with water quality standards, when more restrictive than secondary treatment; and

(3) development and implementation of local limits to protect water quality and wastewater treatment plant processes, as well as industrial pretreatment permitting programs.

Significant additional requirements were added by the 1987 amendments and subsequent Environmental Protection Agency ("EPA") regulations. These newer requirements include:

(1) control of chemical-specific toxics and whole effluent toxicity;

(2) control of combined sewer overflows (CSOs) consistent with the EPA's new CSO Policy; and

(3) compliance with NPDES stormwater permits which currently require attainment of water quality standards.

In addition, special regional legislation for the Great Lakes states is resulting in more restrictive requirements which may ultimately be directed to other parts of the United States. EPA, the states and the POTW community are only now implementing many of the 1987 amendments for these programs, while Congress is considering further requirements as part of the Clean Water Act reauthorization.

2. *Major Increase In Municipal Wastewater Facility Construction Needs*

These CWA requirements have resulted in increased growth in municipal wastewater treatment facility construction needs. For example, EPA's 1992 Needs Survey[2] reports $145.7 billion in unmet needs (excluding stormwater compliance), an increase of $35 billion in the two years since the last Needs Survey. The Needs Survey indicates that $26 billion worth of secondary treatment construction costs still remain. Absent federal funding support, most of these needs will have to be met by local wastewater ratepayers, resulting in progressively increasing rates for communities of all sizes. This will be a particular burden for disadvantaged or small communities.

Perhaps the most significant change in the 1992 Needs Survey is in combined sewer overflow (CSO) control needs. CSOs result when storm events exceed the carrying capacity of combined sanitary and storm sewers, causing them to overflow. EPA recently issued a final policy guidance document which provides the framework for abating the water quality impacts from CSOs. But this will not be inexpensive. EPA-identified costs associated with controlling CSOs increased from $20 billion in 1990 to $42 billion in 1992. Others would estimate CSO control needs at much higher levels.

As an example, the City of Philadelphia estimates that it will cost almost $25 million dollars through FY 1998 to implement needed CSO controls. An additional $11.8 million will be needed for stormwater compliance activities.

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[2] U.S. Environmental Protection Agency, 1992 Needs Survey Report to Congress, 1993.

The Needs Survey includes only reported (or modelled) needs as reflected in facility plans prepared to meet current CWA requirements. Other uncounted, or as yet unplanned, construction needs exist. In particular, significant funding will soon be needed to rehabilitate and replace existing municipal wastewater treatment facilities. Significant additional funding also is required to operate and maintain treatment facilities. These costs are not reflected in the Needs Survey.

The Water Environment Federation recently surveyed POTWS of all sizes about their wastewater treatment chemicals (i.e., disinfectants), services (i.e., mechanical and process designs) and equipment (i.e., pumps and biosolids digesters) needs for the next two years.[3] Our research found the total needs for ongoing treatment efforts to be about $1.9 billion for 1994 and $2 billion for 1995. About half of this amount is for equipment replacement or upgrades, with the remainder for services and chemicals. The following chart summarizes these needs (in millions of dollars):

PRODUCT SECTORS	1994	1995	*YEAR-TO-YEAR VARIANCE*
EQUIPMENT	$966	$1,016	+5.2%
SERVICES	544	551	+1.3%
CHEMICALS	408	418	+2.5%
TOTAL:	$1,918	$1,985	+3.5%

On a regional basis, the Northeast accounts for 30% of these needs, followed by Midwest (22%), Southwest (21%), Southeast (19%), and Northwest (8%).

I would stress that these needs do not represent new facility construction; they only represent one part of the Operations and Maintenance funding needs for the 15,700 POTWs currently operating throughout the country. The survey estimates that demand from new facilities would increase the treatment products needs by 10-15% annually.

When current treatment products needs are extrapolated over the same 20 year time horizon as the EPA Needs Survey, and using the 3.5% annual increase from the WEF

[3] Water Environment Federation, POTW Market for Wastewater Treatment Products: 1994/1995 Forecast, prepared by Business Development Services Inc., Sept. 1993.

survey, this area of needs will almost double to approximately $3.7 billion/year by 2014. Put another way, wastewater treatment products needs will add $52.3 billion to the new construction needs identified by EPA. These figures do not include budget items such as salaries and benefits for treatment plant personnel.

Another recent survey, conducted by the Association of Metropolitan Sewerage Agencies ("AMSA") of 106 of its large POTW members, revealed that municipalities are paying about 84% in direct municipal financing of the new construction costs to comply with the Act.[4] Other financing sources include SRF loans (6.7%), state grants (0.9%), remaining federal grants (7.9%), and miscellaneous other sources (0.9%). In other words, over 90% of wastewater treatment facility construction costs are being paid by local governments through direct local financing or loan repayments to SRFs.

Similarly, WEF's survey found that the biggest source of funding for wastewater treatment equipment, chemicals and services was local user fees (70%), followed by bonds (9.9%), federal and other funds (9.1%), SRF funds (8.3%), and other local revenues (2.7%). The survey also found that while large POTWs such as those surveyed by AMSA represent large per unit expenditures, they represent only a small portion of the total POTW universe. For example the WEF survey found that total forecast spending for all plants between .1 and .9 million gallons per day (MGD) for treatment products was only 19% less than for all facilities larger than 50 MGD. Thus, it could reasonably be estimated that total new construction costs for small and medium municipalities would approach that of these larger, though less numerous, POTWs. Their new construction needs are estimated by AMSA at over $30 billion.

This data is evidence that wastewater infrastructure needs are large and will require significant expenditures in order for municipalities and others to maintain compliance with water quality program requirements.

3. *Major Increase In Demand For Improved Science And Technology*

Third, ***local experience in water quality standard setting and water quality permitting activities dramatizes the need to expand resources for improved science to ensure sound, risk-based regulatory decisions, which focus on high priority areas, and the***

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[4] Association of Metropolitan Sewerage Agencies, 1993 Municipal Wastewater Treatment Agency Financial Survey, to be published Spring 1994.

improved technology needed to implement those decisions. This objective is particularly important for decision-making at the local, watershed, and state levels where site-specific water quality standards are developed and approved under current law. Better science, and the necessary protocols for its use, will likely determine the success of any new watershed program under the Clean Water Act.

Unfortunately, EPA's innovative and alternative treatment assistance program was phased out concurrent with the end of the Title II grant program in Fiscal Year 1990. Overall investment in the development of improved wastewater treatment technology has been markedly curtailed since then. The POTW community has only been able to make limited investments in treatment technology, research, and demonstration studies through the efforts of individual POTWs or in collaboration with other research organizations, principally the Water Environment Research Foundation (WERF), with limited EPA participation.

As with other national endeavors, ***further development of treatment technology, research, and demonstration studies is key to improved water quality and heightened cost-effectiveness.*** Increased federal support would make a significant contribution to technology development. To this end, Congress should consider allowing federal funding to be utilized for innovative and alternative projects.

Clean Water Funding Options Should Be Considered Now

During the past two years, there has been increasing recognition that additional resources are needed to renew the national clean water commitment. With constraints on the federal general fund by a variety of fiscal limitations, congressional consideration of alternative funding sources is critical to moving this program forward at local, state, and federal levels.

Clearly, federal financial support to achieve our clean water goals is needed still. Alternative revenue provisions should be considered by Congress as part of CWA reauthorization efforts. In view of current needs and potential additional requirements, this consideration cannot wait for the next clean water reauthorization cycle.

Let me briefly summarize some of the options available to Congress which would increase the financial resources available to state and local governments:

1. **Continued capitalization of state revolving loan funds;**

2. **Encouraging public/private partnerships through removal of statutory and regulatory barriers;**

3. **Special financial assistance for small and disadvantaged communities, including grants on a limited basis.**

4. **A dedicated source of revenue, including small fees imposed on a broad range of products and activities which contributed to water quality impairment.**

5. **Changes to the Tax Reform Act of 1986 to remove disincentives to providing tax-exempt financing for environmental infrastructure.**

6. **Changes to the SRF process to reduce unnecessary requirements, including eliminating redundant CWA Title II requirements and federal oversight requirements which duplicate state requirements.**

7. **Allowing states more authority over infrastructure development priorities.**

8. **Encouraging states to leverage SRF funds.**

9. **Extending loan payback periods for small and disadvantaged communities when the payback period does not exceed the life of the facility.**

10. **Allowing small communities to utilize alternative technologies such as constructed wetlands for wastewater treatment in lieu of secondary treatment facilities when such alternatives provide equivalent protection of human health and the environment.**

11. **Streamlining loan procedures for small communities which often do not have the administrative capability of applying for an SRF loan.**

It would appear that the Clinton Administration also is considering alternative funding approaches, as reflected in the economic incentives study proposed in the President's Clean Water Act Reauthorization Recommendations. Now that the Administration's initial clean water proposals have been issued, it is time for the White House to join with Congress and others in evaluating funding and revenue alternatives.

Working with local government, state representatives, and other interests, *we recommend that Congress and the Administration convene a forum on clean water funding and revenue alternatives this spring while Clean Water Act reauthorization is receiving high public and congressional attention.*

The purpose of such a forum or workshop would be to identify funding and revenue options on which all parties could reach consensus, and which would provide for stable,

predictable, and adequate long-term funding to help protect and improve our nation's waters. The workshop approach could be similar to the "reg-neg" or negotiated rulemaking process that proved successful in developing EPA's CSO Control Policy by bringing a range of interests together to develop a consensus. The Water Quality 2000 policy project initiated by WEF also successfully used this approach. A funding alternatives workshop also would round-out the CSO Policy, which does not address construction financing. WEF would be pleased to assist a Congressional or Administration initiative to organize and conduct such a workshop.

This completes the Federation's formal statement. I would be pleased to respond to the Subcommittee's questions.

INLAND WATERWAYS INFRASTRUCTURE ISSUES AND RECOMMENDATIONS ON NEW CONSTRUCTION PROJECTS FOR THE INLAND WATERWAYS SYSTEM

A PRESENTATION
TO THE
HOUSE COMMITTEE ON PUBLIC WORKS
AND TRANSPORTATION
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
UNITED STATES HOUSE OF REPRESENTATIVES
BY
THE INLAND WATERWAYS USERS BOARD
BERDON LAWRENCE
CHAIRMAN

Berdon Lawrence, President
Hollywood Marine, Inc.
55 Waugh Drive, 10th Floor
Houston, Texas 77007
(713) 868-1661

May 4, 1994
Washington, D.C.

Good morning Mr. Chairman and Members of the Subcommittee:

I am Berdon Lawrence President of Hollywood Marine, Inc. and also present Chairman of the Inland Waterways Users Board. The Board was established in the Water Resources Development Act of 1986 as an Industry Government Advisory Board.

Hollywood is a major shallow draft inland barge company transporting petroleum, petroleum products, chemicals and petrochemicals for a wide variety of users and refineries. Hollywood operates approximately 240 barges with a fleet of about 100 towboats. The Inland Waterway Users Board was intended to be comprised of 11 members that represent different geographical sections of the nation and different cargos such as farm products, coal, and petroleum products and petrochemicals. The Users Board meets three times a year to develop and make recommendations to the Secretary of the Army and the Congress regarding construction and rehabilitation priorities and spending levels on the commercial navigational features of the Inland Waterways. As such, the Board has been careful to balance revenues from diesel taxes which flow into the trust fund against the expense of navigation facilities construction which is advocated by various shippers, exporters, the Congress and others. The barge industry pays a 19¢ a gallon diesel fuel tax which will rise to 20¢ next January 1st. These revenues flow into the Inland Waterways Trust Fund which pays 50% of the cost of new construction and 50% of the cost of major rehabilitation, with the Federal Government paying the other 50%. Maintenance of the existing system is and has always been a 100% federal responsibility. Later in this statement I will cover additional questions the committee requested dealing with other sources of funding for the inland system.

Mr. Chairman, you will notice among the members of this particular panel that a different emphasis is placed on construction by the barge industry, which I represent, and some of the other panelists whose principle concern is regional economic development. This observation is in no way intended as a criticism, it is merely a matter of emphasis and perspective based upon the fact that the barge industry is the only one of the present users that pays taxes directly to a Federal Transportation Trust Fund. A second difference is found in the fact that the Users Board must view our nation's inland waterway development from a national priority standpoint rather than from a regional standpoint.

I have been Chairman of the Inland Waterways Users Board since the beginning of 1993 and I want to take just a moment to explain the barge industry's perspective, as well as the User Boards perspective on new infrastructure construction. At our first meeting in 1993 we were confronted with the Clinton Administration's effort to raise our diesel taxes by $1.00 per gallon, from roughly 19¢ to $1.20, over a 500% increase. The Board ultimately recommended delay for a group of six projects that were in the preconstruction engineering and design phase and were scheduled shortly to move into construction. After successfully defeating this tax increase in its entirety, but nevertheless being made subject to the 4.3¢ per gallon transportation fuels tax under the 1993 budget agreement, the Board then learned of a downward revision in revenue expectations for The Inland Waterway Trust Fund. At the same time we learned of possible new efforts by the administration to subject the industry to higher taxes again in the 1995 budget. Fortunately, there were no recommendations for higher taxes in the 1995 budget, but we are confronted still with the cost of the six new projects planned for construction against

flat or possibly declining revenues, and the Board has determined that the strictest prioritization standards must be employed if the revenues in the trust fund are to be sufficient to pay for the needed projects plus rehabilitation without subjecting the industry to mammoth new tax increases.

The board is not opposed, per se, to construction of navigation facilities, but its actions over the past year and at its next meeting in July have reflected and will continue to reflect the application of principles individual board members follow in their own business. The members bring to this advisory board these time tested principles as the basis for its recommendations to the Government. First and foremost is to cut spending before examining the question of higher taxes. The Federal Government itself is striving to achieve this kind of priority and I am sure this committee's members can understand our position because you are being forced to go through the same budget cutting process yourselves.

Mr. Norb Whitlock, Senior Vice President of American Commercial Barge Line Company, Jeffersonville, Indiana has been heavily involved in coming up with recommendations that will enable us to reduce construction costs and obtain the maximum mileage out of available revenues from the trust fund.

By way of illustration I would like to describe the concept that we have been discussing with the Corps of Engineers. During the mid 1960's Mr. Whitlock worked as a member of a design team with the Louisville District U.S. Army Corps of Engineers. There, the team was given the task of designing a low cost temporary 1200 foot lock that could be constructed at L/D 52, Ohio River, near Paducah, Kentucky, to meet the navigation traffic demands until what is known today as Olmsted could be completed by 1978. The temporary 1200 foot lock was designed, constructed, and placed into service in just 40 months which is a record in itself. The total construction cost was only 10.0 million dollars. There are several points that are worth noting:

(a) The temporary lock which was only designed to last 8 years has now been in service for nearly 24 years. The lock has functioned quite satisfactorily in passing approximately 50 to 60 million tons of commerce per year.

(b) By the time the Olmsted project is completed this temporary lock will have been in service approximately 35 years.

(c) The lock walls were constructed of steel sheet pile cells driven in the wet and filled with granular material as opposed to the traditional concrete monolith walls that are built inside a coffer dam.

The board recognizes that cellular construction methods are not appropriate for all projects. However, there are many projects where low cost construction and design methods, if utilized, could reduce construction costs by 50 to 60 percent on some projects when compared to the traditional Corps' methods.

We appreciate the Corps of Engineers assistance in embracing these concepts and their forming of partnering work groups with Industry to reduce project costs. However, to

achieve a paradigm shift we need to start today in applying these construction and design concepts to the projects currently being considered for construction authorization such as, Monongahela River Lock and Dam 2, 3, and 4, Marmet Lock on the Kanawha River, Montgomery Point on the Arkansas River and Inner Harbor Lock on the Gulf Intracoastal Waterway at New Orleans.

We urge you to direct the Corps of Engineers to evaluate and be directed to incorporate new innovative design and construction techniques to achieve significant construction cost reductions for all projects currently pending construction authorization.

Currently there are 8 projects that are under construction and are at various phases of completion. The barge industry pays 50% of the cost shown as earlier explained. Table I lists these projects.

Having previously raised the subject of rehabilitation, Mr. Chairman, I would like to address your question of estimates of future infrastructure needs because those needs are closely related to the rehabilitation program. The key factor in assessing future needs is costs, especially in light of traffic growth on the system.

The U. S. Army Corps of Engineer's Water Resources Support Center released its National Waterways Study Final Report (NWS-83-1) in January 1983. At the time of its release it was the first nationwide study of the national waterways since 1908. The report noted that the waterways infrastructure consisted of a progressively aging and more intensively used system and that overall, traffic was expected to increase from 24 to 51 percent during the 25 year period 1978 to 2003.

The study found 62 U.S. locks should be renovated, replaced, or supplemented by 2003. Key to these projections, Mr. Chairman, was a forecast of 5 to 6% annual traffic growth. Instead of 62 new or rehabilitated locks, we have about 8 new and 9 rehabs under construction. And instead of 5 percent traffic growth, we are experiencing 1 to 1 ½ percent growth, or in some cases no growth. This low growth rate is the result of no new refineries or coal fired electrical generating stations and the intense global competition in export grains.

Yet the 1983 report was on the mark in noting the age of the system. Two years ago in testimony before this committee the Assistant Secretary of the Army for Civil Works, Nancy Dorn, offered the same observations relative to the importance of rehabilitating the system. The infrastructure system is not about to fall into the river and float out into the Gulf of Mexico, but it requires heavy and expensive major rehabilitation.

Those 62 projects called for in 1983 will not be built in the next 8 years, Mr. Chairman, but our water transportation system will survive with what we are able to construct and rehab within our limited trust fund finances.

In order to determine the earliest possible construction start date without creating a negative Trust Fund balance, various scenarios of revenue and projected project construction costs as shown on Table V were used to demonstrate the impact revenue growth and reduced construction cost have on project start dates. Table V clearly

illustrates the importance of reducing construction costs.

If innovative design and construction techniques are adopted, nearly all projects pending construction authorization can be started during the next 10 years. Otherwise only one project can be started between now and the year 2005, under Scenario 1 from Page 12, which assumes treasury revenue growth forecast of zero.

In conclusion without cost reductions we can only start one project in the next 10 years. With significant cost reduction we can start all six projects and do the rehabilitation needed in the next 10 years.

The ultimate conclusion the Board has reached on finances as well as changing traffic patterns and volumes, over time, is the need to preserve as much of the present system as possible so that we maintain for our producers, exporters, and consumers the low cost and efficient distribution system which currently provides them the advantage they enjoy.

As part of the 1992 Water Resources Development Act, the Inland Waterways Trust Fund, as earlier mentioned, also pays 50% of the cost of major rehabilitation. This work is designed to extend the life of a project without having to completely replace it. The nine projects in this category are shown in Table II. In addition, over the next several decades there will be roughly 40 million dollars a year of additional major rehabilitation proposed, half of which will be paid for from the trust fund. Major rehabilitation expenditures from the trust fund to which the industry agreed in 1992 constitute a major future obligation for the barge industry. Many parts of the system are in need of major repairs, Mr. Chairman, and the magnitude of expenditures required plus the number of eligible projects means that major rehabilitation is equivalent to about two new project construction starts every decade. At the present time the inland waterways trust fund has a balance of about 198 million dollars. It is estimated that in 1994 83.7 million dollars will be generated from taxes, and 7.3 million dollars will be generated from interest income for a total trust fund income of 91.0 million for 1994.

The six major projects mentioned earlier that are about ready to move into construction and which are being discussed by either the U.S. Army Corps. of Engineers, the Congress, regional economic development groups and the barge industry are shown in alphabetical order in table III. These are the projects which the Users Board will be required to prioritize at it's July 26th meeting. As noted earlier, present trust fund receipts and anticipated future receipts are insufficient to fund all six without further tax increases. We must be vigilant about trust fund receipts because if all six projects proceeded on normal construction schedules another 30¢ to 50¢ in diesel taxes would be required resulting in the taxed portion of a gallon of diesel exceeding its wholesale cost. While petroleum prices have declined, it must be remembered that oil prices move in cycles. We must also recognize that during the last 16 months, through two 2¢ a gallon tax increases under IRC Section 4042, plus a 4.3¢ a gallon deficit reduction tax last year (total 8.3¢) our fuel taxes have risen from 15¢ a gallon to 23.3 cents a gallon, a 64% increase in less than a year and a half. Oil prices have not fallen that sharply. The board has worked closely, Mr. Chairman, with the Corp of Engineers on alternate construction standards that are designed to reduce outlays.

The true users or beneficiaries of the waterways, Mr. Chairman, are the farmers, the coal miners, petroleum and petrochemical processors, utilities, and American consumers in general. The barge companies are really not the users, but are simply the facilitator for the users. In order for these true users to be competitive in the "global market" they must find ways to deal with the stiff foreign competition which they confront in global markets. This requires placing the strongest emphasis on cost reduction. The barge industry, along with our customers, strongly support reductions in spending on navigation projects as already indicated and strongly oppose any increase in our diesel taxes that will tend to make our customers less competitive in the global marketplace.

Another way to view this problem, Mr. Chairman, is to look at traffic data from the Corp of Engineers from selected inland waterway segments. Table IV shows data from the U.S. Army Corps. of Engineers Waterborne Commerce Statistic Center for a 10 year period, 1984 to 1993. While in the earlier years of this 10 year period some growth appears, in the last 2 or 3 years most of the segments show flat traffic growth patterns. And of course we discount 1993 altogether because of the flood. I know that in the territory of my operations along the Gulf Intracoastal Waterway we are not witnessing new or expansive construction of petroleum refineries and chemical facilities that would promise greater traffic growth. We must therefore be extremely cautious about increasing costs and crippling our domestic industries. Table IV shows data from the U.S. Army Corp of Engineers Waterborne Commerce Statistic Center for a 10 year period 1984 to 1993 for the system as a whole. The average annual growth rate for this period is only .8% per year. Such low growth rates will permit the delaying of projects thereby serving to maintain positive trust fund balances. Also, lower growth rates actually being experienced will permit delaying of such projects at McAlpine Lock and Kentucky Lock thus negating the need to increase user fees.

Closely related to our interest in holding down costs as well as taxes is the element of additional financing for waterways construction about which the committee inquired when it invited me to testify. There is a little discussed, but extremely significant financing contribution to total waterways development that is made by state and local governments. In many states bordering our navigable waterways it is quite common for smaller inland ports to issue bonds in furtherance of navigation interests and economic development and to place those bond issues on the ballot. There are numerous instances up and down the river and along the Gulf Intracoastal Waterway in which local port bonds, supported by local taxes, have been issued to support the payment of interest and principal on port and navigation bonds. There are also other cases in which private corporations have issued bonds to build their own facilities, and in which state governments have issued bonds on behalf of their smaller inland ports. We in the barge industry feel that no effort was made to measure the extremely negative impact on these local outstanding bonds that would result from even a 10¢ a gallon tax increase not to mention a $1.00 a gallon increase. To the extent that higher taxes render water transportation less economical local port and navigation districts will be taxing themselves to support navigation facilities that will become underutilized. This simply demonstrates, Mr. Chairman, that waterway development is and has historically been a highly integrated effort on the part of private shippers, barge lines, state and local governments, and the federal government. We caution that the one element, the barge industry which is already heavily taxed should not have this burden increased without a careful

view of the unanticipated consequences.

This then leads, Mr. Chairman, into a discussion of alternative sources of financing for the system and how they may be structured. In the past it has always been a given, and certainly the barge industry has always argued that there were well recognized financial benefits associated with navigation project development. This seemed especially obvious since each potential project was carefully examined by the Corps of Engineers for its cost benefit ratio prior to Congressional approval. Some say that in todays different and very tight budget climate favorable cost benefit ratios may not be sufficient, although frankly in the inland navigation area we have some truly outstanding ratios that can be pointed to. Some would argue that somehow other beneficiaries of the system should be looked to for additional revenue. This would include utility customers, coal producers, agriculture hydropower, recreation, etc. While I have heard of such proposals I have never worked my way through a concrete example. However, it has occurred to me that some of the same problems that were encountered in drafting last years BTU tax would be encountered in trying to reign in all of these other system beneficiaries How much would you tax them? Where would the incidence of the tax be placed? Who would be exempt?

On the subject of alternate financing, despite my hesitation previously expressed, the Congress might want to have a commission of Federal, State and Private Industry Members to look at some local financing options for construction similar to the highway program. An example I can offer is illustrated by CBO's May 1992 study, "Paying for Highways, Airways, & Waterways." Among many points and conclusions concerning transportation financing, the Congressional Budget Office noted that at the local government level in 1989, non-highway related sources (property tax, general fund, bond proceeds) comprised 93.9% ($18.3 billion) of road and highway funding. Only 6.1% ($1.19 billion) was derived from user taxes and tolls. Yet it must be remembered at all times that on the basis of the federal governments historic operations and maintenance obligation, many private firms as well as state and local governmental units have already raised their own taxes to support navigation related expenditures, and shifting more operations and maintenance, or construction responsibility to these entities could jeopardize those earlier debt issues. Finally, Mr. Chairman, we would hope that the Congress would not turn to transportation fuel excise taxes for deficit reduction in the future. This does nothing but deprive us of our ability to finance infrastructure projects from the trust fund. We would encourage the Congress to allow the Inland Waterways Users Board to continue working with the Corps. of Engineers to reduce construction costs, and prioritize the system. We feel that we are making progress.

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In closing, I would like to emphasize three key perspectives from our industry.

(1) Defer Construction Starts:

Due to our forecast of very slow growth or no growth that we discussed earlier, we can easily defer the construction starts on new projects by several years which will not impede traffic flows, but will allow us to live within our economic means.

(2) Change the Traditional "Culture" of the Corps of Engineers:

Due to severe economic cost constraints we must totally change the method that projects are designed and constructed. We need to look at locks that will last 50 years versus 100 years.

(3) No Increase in User Taxes:

due to the extreme competitive nature of the global economy, we cannot afford to increase the costs to our customers through imposition of user taxes, when they are many methods to dramatically cut costs and spending.

We have the finest barge transportation system in the world. I urge you to provide the leadership that allows the United States to continue to have a cost efficient system.

TABLE I
PROJECTS UNDER CONSTRUCTION

ITEM	PROJECT	ESTIMATED COMPLETION DATE, STATE	AMOUNT SPENT TO DATE	TOTAL AMOUNT TO BE SPENT
1	Bonneville	1994 WA, OR	327.30 million	341. million
2	R. Byrd	1998 OH, W.VA	262.84 million	384. million
3	LD26/ Mel Price	1994 IL, MO	198.76 million	212.6 million
4	Oliver	1993 AL	117.22 million	120. million
5	Grays Landing	1996 W.VA	136.4 million	171.8 million
6	Pt. Marion	1995 W.VA	100.32 million	101.5 million
7	Winfield	2000 W. VA	65.0 million	372. million
8	Olmsted	2006 IL, KY	46.96 million	1.1 billion

TABLE II
MAJOR REHABILITATION PROJECTS UNDERWAY

ITEM	PROJECT	RIVER	STATE	AMOUNT
	4 Illinois River	Illinois	Illinois	$32.5 million
1	Brandon Rd.			
2	Dresden Isle			
3	Marseilles			
4	Lockport			
	Upper Mississippi	Mississippi	Illinois and Iowa	
5	Lock # 13			$20.7 million
6	Lock # 14			$19.6 million
7	Lock # 15			$22. million
8-9	Brazos River Floodgates (2)	Brazos	Texas	$ 9. million

Table IV

Total Commerce Moved on Inland Waterways
from 1984 - 1993
VS
Projected Tonnage Growth from National
Waterways Study Final Report
(NWS-83-1)

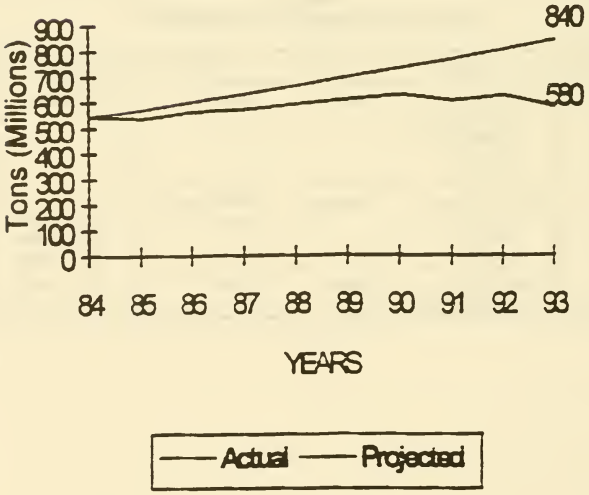


TABLE V
SUMMARY OF PROJECT START-YEAR IMPACTS OF EACH REVENUE SCENARIO

PROJECT	BASE CASE START YEAR IN CORPS FEASIBILITY REPORT [1]	SCENARIO 1 TREASURY REVENUE FORECAST WITH ZERO GROWTH PLUS REHAB	SCENARIO 2 FLOOD REDUCED REVENUE WITH ZERO GROWTH PLUS REHAB	SCENARIO 3 TREASURY REVENUE FORECAST WITH 1.5% GROWTH PLUS REHAB	SCENARIO 4 FLOOD REDUCED REVENUE WITH 1% GROWTH PLUS REHAB	SCENARIO 5 TREASURY REVENUE FORECAST WITH 1.5% GROWTH PLUS REHAB PLUS REDUCED CONSTR. COST	SCENARIO 6 TREASURY REVENUE FORECAST WITH ZERO GROWTH PLUS REHAB PLUS REDUCED CONSTR. COST
Mon River Lock 2&4	1996	1997	2001	1996	1999	1996	1996
Marmet	1998	2005	2007	2003	2007	1998	2001
Inner Harbor	1998	2005	2009	2004	2007	1998	2001
Montgomery Point	1996	2007	2013	2005	2008	2002	2005
McApline L/D	1996	Not Available [2]	Not Available	Not Available	Not Available	2002	2007
Kentucky Lock	1996	Not Available	Not Available	Not Available	Not Available	2006	2011

[1] The earlier possible start date as contained in the Corps of Engineers Feasibility Report.

[2] Not considered by the Corps at this point.

Discussion of Table V

Scenario 1) Includes current projects under construction current major rehabs plus unspecified future rehab of 40 million per year of which 20 million comes from the trust fund and four additional project starts, (1) - Mon 2-4, (2) Marmet, (3) Inner Harbor, and (4) Montgomery Point. Treasury revenue forecast for 1995 or 102 million and a zero growth rate assumption thereafter.

Scenario 2) Includes current projects under construction, current major rehabs plus unspecified future rehab plus four additional new projects. Revenue forecast has been reduced for flood effects and is forecasted to be 88.2 million in 1995 with zero growth thereafter.

Scenario 3) Is the same as Scenario 1 with the exception that revenue is forecasted to grow to 102 million in 1995 and then increase 1 ½ percent per year thereafter.

Scenario 4) Is the same as Scenario 2 except revenue growth is estimated to be 89 million in 1995 and is projected to increase 1 percent per year thereafter.

Scenario 5) Includes current projects under construction, current Major Rehab plus unspecified future Major Rehab and 6 new projects. Treasury revenue forecast for 1995 of 102 million and 1.5 percent revenue growth assumption thereafter.

Scenario 6) Is the same as Scenario 5 except revenue growth is estimated to be zero.

These 6 Scenarios are shown on Table V.

Major cost reductions for planned projects consisted of:

- Olmsted (-25%)
- Monongahela 2 and 4 (-26.6%)
- Marmet (-20%)
- Industrial Harbor (-20%)
- Montgomery Point - a total cost of 70 million dollars
- Kentucky Lock no cost reductions.

Using Scenario 1, Mon River 2-4 could not commence construction until 1997. Marmet could not start until year 2005 and Industrial Harbor could also not commence before 2005, and Montgomery Point in the year 2007. This slippage in construction given current project cost estimates is necessary to insure that the Trust Fund balance always remains positive.

On the other hand, using Scenario 5, which includes lower construction cost alternatives allows Monongahela 2 and 4, Marmet and Industrial Harbor Canal Lock to all start on the optimum feasible schedule provided by the program design at HQUSACE. However, the

next project, McAlpine Lock, must be delayed until 2002 to avoid a deficit in the Trust Fund. Montgomery Point can start in 2002 followed by the Kentucky Lock in 2006. In the earlier analysis with full construction costs all projects except Monongahela 2 to 4 had to be dropped from the program schedule to avoid Trust Fund deficit, so the lower construction cost have a very significant impact.

ABC
ASSOCIATED BUILDERS AND CONTRACTORS, INC.

Statement of Associated Builders and Contractors

TESTIMONY OF SCOTT McELWEE
McELWEE-SCARBOROUGH CONSTRUCTION
GIBBSBORO, NEW JERSEY

before the
SUBCOMMITTEE ON INVESTIGATION AND OVERSIGHT

HOUSE PUBLIC WORKS AND TRANSPORTATION COMMITTEE

UNITED STATES HOUSE OF REPRESENTATIVES

MAY 3, 1994

Speaking for the Merit Shop

1300 North Seventeenth Street
Rosslyn, Virginia 22209
(703) 812-2000

Good morning. I am Scott McElwee with McElwee-Scarborough Construction. Our company, based in Gibbsboro, New Jersey, builds wastewater treatment facilities as well as other heavy construction projects. As Chairman of the Associated Builders and Contractors' (ABC) National Infrastructure Committee, I appreciate this opportunity to testify on the state of our nation's water infrastructure needs.

ABC represents over 16,000 contractors, subcontractors, material suppliers and related firms from across the country and from all specialties in the construction industry. Our diverse membership is bound by a shared commitment to the merit shop -- the most efficient construction technique in America. The merit shop philosophy of awarding construction contracts to the lowest responsible bidder, regardless of labor affiliation, through open and competitive bidding, assures taxpayers and consumers the most value for their construction dollar. With 75 percent of construction done today by open shop contractors, ABC is proud to be their voice.

I would like to commend you and the members of the Subcommittee for undertaking such a comprehensive look at the nation's water infrastructure needs. The costs of insufficient attention to clean water issues are indisputable. Non-point source pollution, leaking toxics, stormwater run-off and coastal pollution pose grave risks to water quality. Our nation's water quality and "environmental" infrastructure could not be more vital to our health, safety and overall quality of life.

While ABC members are concerned regarding a number of wastewater needs, I will focus my comments today on funding for the construction of sanitary waste treatment facilities.

FUNDING

ABC believes inadequate and insufficient wastewater treatment facilities represent a large segment of the clean water problems facing our nation today. According to the Environmental Protection Agency, there is a need for over $100 billion to meet current wastewater treatment demands and this will likely continue to rise.

The commitment Congress made with the states beginning in 1972 to clean up the country's waters by funding projects relating to water supply and wastewater treatment is responsible for the significant progress made in restoring the quality of our nation's waters. When Congress decided to turn the program over to the states in the Water Quality Act of 1987, a schedule was set to phase out direct grants for construction and provide seed money to the states to establish revolving loan funds. These funds would eventually become self-sustaining and fund the states' wastewater treatment construction needs.

Unfortunately, the $18 billion funding level committed to in the 1987 Act to capitalize state revolving funds has not been met over time. ABC believes the federal government must meet its original commitment and supports a $2 billion funding level through 1994 and maintained until 2000 to accomplish that goal.

Currently, the federal government's participation in providing funding to the states for wastewater treatment needs is scheduled to end in 1994. At this critical juncture in our nation's clean water history, we believe a complete cessation of federal funds to the states for this vital environmental infrastructure need would be devastating.

All states have established the legal and procedural mechanisms to administer the new loan programs and are now eligible to receive SRF capitalization funds under Title VI. Some with prior experience using similar financing programs moved quickly, while others had difficulty in making a transition from the previous grants program to one that requires greater financial management expertise for all concerned. Moreover, many states have complained that the SRF program is unduly complicated by Federal rules -- some contained in the statute, others in EPA guidance -- even though states were intended to have greater flexibility.

Small communities and states with large rural populations are having the largest share of problems with the SRF program. Many small towns did not participate in the previous grants program and consequently are likely to require major projects to achieve compliance with the law. Yet these communities often lack an industrial tax base and thus face the prospect of very high per capita user fees, if their citizens are required to repay the full capital cost of sewage treatment projects. According to testimony from the General Accounting Office, SRF's will only meet about one-third of the states' funding needs and will generally be unable to meet the needs of disadvantaged communities.

ABC is encouraged by the efforts being made by Public Works and Transportation Committee and supports the arrangements being made for small communities, such as modifying the procedural or repayment requirements of the SRF loan program.

However, states simply have not been provided enough time or seed money to sufficiently capitalize their revolving funds. There are also many small communities which do not have the capital base necessary to support a state revolving loan fund. In addition, there are a number of other serious and growing threats to clean water which we believe can be addressed by funding a continued water program.

Combined sewer overflows (CSO), for example, are a significant problem in over a thousand cities nationwide. Billions of dollars are needed to clean-up previously overlooked and outdated systems. Nearly 1,200 municipalities have combined sewers where domestic sanitary sewage, industrial wastes, infiltration from groundwater, and stormwater runoff are collected and treated together. These systems serve approximately 40 million persons, mainly in older urban and coastal cities.

Combined sewers are categorized as point sources under the Clean Water Act, yet they have not been considered a high regulatory or permitting priority for EPA or states. There are no express provisions in the Act dealing with CSOs, except to the extent that

they are subject to permit requirements and deadlines as are other point sources. The cost of controlling CSO's is potentially very high (estimates range from $20 billion to $100 billion; EPA's estimate is $41 billion) and local governments say that resources are not available for programs of that size. Conceivably, an extended program can also address improved drinking water filtration or solid waste disposal facilities. ABC supports the idea of allowing localities greater flexibility to consider costs and site-specific factors when designing CSO control strategies.

ABC also supports continued federal funding beyond 1994 to further capitalize state revolving funds for the construction of wastewater treatment facilities or other environmental infrastructure projects.

The Clinton Administration has recommended allowing the current authorization to expire, but then establishing a new four-year authorization for wastewater and other clean water projects. The proposed program would be authorized at $2 billion a year starting with FY 1995.

Clearly, our clean water needs are vast and the federal government must maintain a certain level of participation. Shifting resources to state revolving funds to provide a self-sufficient program and stable revenue source is a productive use of federal funds. Requirements for state revolving funds should be as uncomplicated as possible to facilitate an accessible and efficient program.

Other forms of innovative financing and cooperative efforts will expand the power of federal resources and should be encouraged. Privatization and public-private partnerships for example, are being used more frequently to augment federal, state and local activities -- and they work. These efforts bring the experience, business savvy and financial strength of the private sector to government entities for the benefit of all.

ABC urges Congress to rely on market incentives rather than pursuing taxes to induce environmental conformance. In addition, any funding plan should consider that states will have to impose user fees to meet their share requirements.

Continued federal funding is not a panacea. A long-term integrated plan which takes into account new environmental problems and establishes realistic and achievable clean water goals should be adopted. We also believe every state must develop an environmental needs inventory and strategy for the future to ensure efficient management of resources.

As the committee continues to address our water infrastructure needs and ideas are discussed to improve these problems, ABC recommends that the following reforms and provisions that affect our nation's water infrastructure be considered.

DAVIS-BACON ACT

The Davis-Bacon Act unnecessarily raises the cost of federal construction by an average of 5-15%, with costs in rural areas being inflated by as much as 25-38%. This is a needless waste of taxpayer dollars and thwarts the progress of additional projects that could be built. However, even worse, these figures do not take into account the burden that Davis-Bacon requirements impose on states and localities.

The federal Davis-Bacon law hurts states and localities because its requirements are imposed regardless of the amount of funds that the federal government brings to that project. For example, the federal government could offer a small amount of money for a primarily state, local or privately funded project, and the artificially inflated Davis-Bacon wage rate would have to be paid to all workers on that job. Often times these increased costs virtually nullify the federal contribution. The federal government should not impose Davis-Bacon requirements on already financially strapped state and local governments.

CHLORINE

An issue which is raised in the Administration's recommendations for reauthorization of the Clean Water Act -- prohibiting the use of chlorine and chlorinated products -- is of particular concern to ABC members as water consumers, water and wastewater system builders, taxpayers and small business owners.

The Environmental Protection Agency has asked Congress to authorize the agency to conduct a study which would result in identifying ways to "prohibit, reduce or substitute the use of chlorine and chlorinated compounds in industrial settings, publically-owned treatment works and drinking water systems" within the next three years. Such a plan could have profound effects on the operation of many diverse segments of American industry, on local governments, as well as on our overall quality of life.

A chlorine ban is scientifically unjustified and will have a vast negative impact on the U.S. economy and the health and welfare of all Americans. The agency's request to phase out chlorine assumes that all uses of chlorine and chlorine compounds are persistent and toxic. While industry and scientists alike agree that some chlorine compounds should be further regulated, an outright ban on chlorine would have devastating effects on the safety and quality of our nation's water and waste water systems. Forms of chlorine are used in approximately 60 percent of all U.S. industry. Proposing a ban on the use with regard to water systems is at best short sighted considering the overwhelming benefits that chlorine brings to our everyday quality of life.

Chlorine and chlorinated products play a significant role in public health, particularly water disinfection. According to the World Health Organization, some 25,000 children in Third World countries die every day of diseases carried by dirty water. Chlorine used as

a water disinfectant has virtually eliminated the threat of waterborne diseases, including cholera, typhoid and dysentery in the United States and Canada.

There is no single or simple substitute for chlorine. The health and environmental risks of suggested substitutes are simply not known. Chlorine's role in purifying drinking water to guard against diseases is vitally important. In fact, drinking water chlorination is among the key public health measures responsible for increasing life expectancy in the 20th century.

Nearly 200 million Americans consume chlorine-treated water every day. The use of chlorine to disinfect drinking water and the application of improved sanitary engineering practices have virtually eradicated waterborne diseases in North America. Some 98 percent of U.S. drinking water systems use chlorine and chlorine-based products. About 87 percent of the water utilities that add chemical disinfectant use chlorine, and about 11 percent use chlorine-based disinfectants (chloramine and hypochlorite). As required under Federal statute -- the Safe Drinking Water Act -- residual amounts of chlorine remain in drinking water from the treatment facility to consumers' taps, thereby preventing regrowth of pathogenic microorganisms.

Along with providing wholesome drinking water, chlorine is the key disinfectant used to treat sewage and industrial effluent. The primary objective of water disinfection is to eliminate waterborne disease by destroying disease-causing micro-organisms. Since the early the century, chlorine has become the predominant disinfectant in potable water treatment operations ranging from rural systems to major cities. It destroys a wide variety of disease-causing micro-organisms; it is easy to measure, apply and control; it is relatively inexpensive; and it disinfects throughout the water system. More than 95 percent (by volume) of disinfected waste water effluent is treated with chlorine or chlorine-related compounds. Caustic soda, a bi-product of chlorine, is a widely used alkali with applications in virtually every industry including water treatment and effluent control.

The value of chlorine to consumers and taxpayers depends on the difficulty of finding **suitable replacements** for chlorine. According to industry sources, if other products or processes had to be substituted for chlorine, the net cost to U.S. consumers could exceed some $90 billion dollars a year. Arranging for substitutes and plants to make them would cost nearly $60 billion and the transition would take up to 20 years.

Should the use of chlorine and chlorine-based products be banned in the treatment of water and wastewater, communities would be faced with installing unsound, unproven and very expensive water and sewer treatment processes. It has been suggested that chlorine use could be substituted by installing ultraviolet purification technology (UV) to disinfect wastewater effluent and drinking water. While UV has been installed in some water and sewer facilities, it has not been extensively tested in the United States. Chlorine is tried and tested in the United States and is the best and most proven disinfectant that

completely eliminates bacteria from wastewater and drinking water.

Another alternate treatment, ozone water purification technology, is currently in use in European countries. The ozone process has been proven to be very expensive to install and to maintain. A major cost identified with ozone use is the tremendous electrical source necessary to generate the required power to fuel the process. Again, ozone processes have not been extensively tested in the U.S. and require a significant financial investment currently not associated with the sound technology that we have in place. Neither alternate technology, UV or ozone, will stop regrowth of bacteria in the water system as required under federal statute.

As a water consumer and a builder of water and wastewater facilities, I believe that the use of chlorine in the United States assures a safe and quality water product every time we turn on the tap. Prohibiting the use of chlorine and chlorinated products for water purification would not only jeopardize public health, but also place an undue financial burden on metropolitan water authorities and water supply providers.

In sum, ABC strongly supports the efforts being made by the Public Works and Transportation Committee to ensure that our nations' water quality is improved. We believe that with full funding, reform of the Davis-Bacon Act, and the continued use of proven water purification techniques our water infrastructure needs will begin to diminish and our nations' water quality will drastically improve.

On behalf of the Associated Builders and Contractors, I again want to thank you and the members of the Subcommittee on Investigations and Oversight for the opportunity to testify hear today and I will be happy to answer any questions you may have.

STATEMENT BEFORE THE

SUBCOMMITTEE ON INVESTIGATION AND OVERSIGHT

OF THE

HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

Relating to

Nation's Transportation and Environmental Infrastructure

Needs

By

Ronald L. Norris, P.E.

Immediate Past President
American Public Works Association

May 4, 1994

The America Public Works Association a non-profit educational and professional association whose origins date back to 1894. APWA is headquartered in Kansas City, Missouri, with a governmental affairs office in Washington, D.C. The purpose of the association is to assist public works agencies in fulfilling their responsibilities and to enable people involved in this field to work together to improve their professional practice. Membership is comprised principally of local officials, but also include strong representation from the state and federal levels of government. Educators and representatives of the private sector are also counted among our 25,000 members.

For information, contact Charles A. Byrley
Washington Office
American Public Works Association
1301 Pennsylvania Avenue, Suite 501
Washington, D.C. 20004
Phone 202/393-2792; Fax 202/737-9153

TESTIMONY
by
RONALD L. NORRIS, P.E.
AMERICAN PUBLIC WORKS ASSOCIATION
before the
SUBCOMMITTEE ON INVESTIGATION AND OVERSIGHT
of the
HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
U.S. HOUSE OF REPRESENTATIVES

INTRODUCTION

Mr. Chairman, I am Ronald L. Norris, and I am the Immediate Past President of the American Public Works Association and the Director of Transportation Policy for the Mid-America Regional Council, an MPO serving the metropolitan area of Kansas City, Missouri and Kansas. I am here today on behalf of the American Public Works Association, representing local public works officials in communities throughout the nation. Our members are the people on whom the public directly relies to provide them with the daily needs of a safe and adequate water supply, environmentally sound waste disposal, safe and convenient highways and streets and the dozens of other vital but often invisible services.

If we are to meet the challenges of living and working in a global economy we need infrastructure sustained by a broad vision, created by a long-term strategy and managed through an effective process for implementation. Infrastructure has no needs of its own. It is the means to achieve those ends we as a community and a nation choose.

Public works professionals design, construct and maintain the structures and facilities which governments at all levels provide so that services essential to the functioning of an organized society are available. At our best, we blend engineering skills, architecture and art with the techniques of public administration to manage socially significant and capital intensive operations in a public and often political environment. At our worst, we are considered responsible for causing traffic delays due to road construction, water main breaks, the inability to find a solution to the problem of solid waste disposal, potholes, bridge collapses, snow, floods and droughts. In short, we

have much in common with elected officials and others in public service: we are more identified with the problem than with the solution.

1994 marks APWA's centennial. A century ago, cities were viewed as immoral, dirty and dangerous places. Our profession's founders had a broad vision of what cities could be. They were committed to large-scale planned, engineered, capital intensive, long-term solutions to municipal problems. They believed in the gospel of scientific management, the notion that objective, rational methods can introduce significant gains in the efficiency of service provision.

A century ago our nation stood on the verge of the "progressive era," where one would see the development of modern, scientific approaches to designing and managing government. Today we stand on another threshold. As we look out over the horizon, we see public works as the physical requirements of achieving our social agenda. Without safe, adequate and reliable public works systems our nation's economic, social and environmental needs cannot be met.

Much has been written concerning the vast infrastructure needs facing the nation today. The most recognized report on the subject probably being the National Council on Public Works Improvement report, **Fragile Foundations**. This sobering and challenging document as well as others concluded the U.S. as a whole was not paying enough attention to our Nation's infrastructure, and pointed to a decline in the relative share of public works investment as a primary cause.

In fact, total investment in public works as a per cent of Gross Domestic Product has declined by over 40% since the 1960s. In addition, using similar measures, we are spending 75% less than our chief economic competitors, Japan and Germany.

The American Public Works Association obviously supports increased spending on infrastructure and public works services. However, we understand that in the current budget climate everything is a zero-sum game, that for every additional dollar spent on infrastructure, a dollar has to

be taken from other vital programs. Therefore it is incumbent on public works officials and policy makers to insure that every dollar being spent on public works is being targeted for maximum effect.

We in APWA believe that public works does not exist as an end unto itself. Public works services and infrastructure products exist for one reason only...to serve the broader social goals of the nation and to enhance our economic competitiveness. Public works do not accomplish the long-term social goals of this country, but without public works, they cannot be accomplished. This implies the need for a targeted and strategic public works investment strategy. This strategy needs to be long-term in focus and outcome oriented. Not all infrastructure investment is good or needed. We must look to the broader goals which infrastructure serves and target out spending in those directions.

While in Japan I saw a focused, targeted approach to infrastructure investment. Not only are the Japanese spending more on infrastructure, they are making their investments count. In Japan, infrastructure investment falls into two broad categories, social infrastructure and industrial or production infrastructure. Social infrastructure are those investments which are targeted to increase the quality of life, while production infrastructure are those investments targeted to benefit industry, enhance production and thus increase international competitiveness.

I do not recommend the Japanese model in its entirety, but I do appreciate the focused, long-term view which is taken when making investment decisions. APWA does not believe public works spending nor infrastructure should be viewed as economic stimuli strategies, as "make work" projects. Rather, infrastructure spending should be part of a long-range capital investment plan which is geared toward enhancing productivity, increasing our international economic competitiveness and creating sustainable growth and development. The accomplishment of these objectives would also assist the country in achieving its broader social goals.

The "rule of the farm" is very applicable in this situation. In farming, unlike school, one cannot cram for examinations. You have to plant in the spring, take care of the crop in the summer and reap in the fall. If you fish all spring and play golf all summer, you will not reap in the fall. There is no way to achieve results by cramming. The same is true for our infrastructure. Only long-term, sustained and focused attention will achieve results. To catch up by cramming is counter-productive and will not achieve the strategic results so vitally needed at this time.

Therefore, as I answer the questions posed, I will not address the funding need - that is obvious. I will address our view on how to be more effective with what we have.

Mr. Chairman, in your letter of invitation you identified four subject areas of interest. I have attempted to organize my testimony around those four subject areas.

Assess the nations current and future infrastructure needs, and the priorities for meeting those needs.

NEED FOR VISION

Because public works infrastructure is more than physical structures and facilities, we need a vision of public works as the physical tools to achieve our broader social purpose. So long as we consider public works to be just things and not people, to be asphalt and concrete, not jobs, mobility and quality of life, we will continue to diminish its importance. The guiding vision of our programs should be defined by the role of infrastructure in restoring our nation to the forefront as a respected, economic power.

In virtually every field of endeavor, the impact of globalization is being felt. While we have long been aware of international developments, we only recently have come to the realization that we are truly living in an interdependent era, that what others are doing in the rest of the world will impact on us, as well as the other way around. Public works is an important part of this story. Having national, integrated, coordinated programs in transportation and water resources will make an important contribution to our ability to compete in the world marketplace.

NEED FOR STRATEGY

We need strategy that is based on a long-term view of infrastructure investment. We are not proposing large-scale, centralized, bureaucratically-run systems. Those were perhaps more appropriate for the last century. What we need today are public works policies and programs that reflect a global perspective, but are adaptable to local needs and conditions.

A strategy that is globally directed but locally implemented is a great challenge for us all. Yet it is essential because we must recognize that "all public works are local." Like the politics it serves, public works must fit community values, local geographic & environmental conditions and financial resources. If they don't, they just won't work.

Flexibility over time as well as space is also key to an effective public works strategy. We need to adapt to changing needs and conditions, not only from one year to the next, but because of the long-term character of public works, often from one generation to the next. Large-scale, centralized public works systems have inherent difficulty in being adapted to changing social and economic conditions. for example, no one planning the interstate system, anticipated the phenomenal growth of the trucking industry, suburbanization or the emergence of environmentalism.

From the perspective of the local public works official, an effective federal public works strategy is global in outlook, local in application, flexible, yet long-term. Most of all, an effective strategy is based on communication, not confrontation. We must overcome the limitations of adversarial approaches to legislation and regulation and put an end to adversarial policies, such as unfunded mandates if we are to leverage all our nation's resources effectively in the global marketplace.

NEED FOR IMPLEMENTATION

One of our very first priorities is to protect the investment in our nation's infrastructure. Protecting our investments, making sure they will have their intended long-term benefits, requires we take into account the maintenance

of what we build. There is little glamour in this work of keeping our existing infrastructure safe and functional. Building something new is for many reasons more attractive. But maintenance is the new frontier for public works. Coming up with more effective management tools, technologies, and innovative financing concepts to keep what we have from deteriorating is a bigger challenge today than the dramatic construction of dams, highways and bridges was in the new deal.

There is a need for a public works policy process that includes those who are called upon to manage and maintain what is built. An effective public works strategy should incorporate maintenance and management concerns. It should seek to maximize resources and talent at the local level.

APWA members are your local public works officials in communities across the nation. We are the people at the end of the legislative and regulatory pipeline, on whom flows the responsibility of implementing your decisions. From all regions, small and large cities, rural and suburban communities, APWA and its members are ready to assist you in any way you think appropriate to help frame public works programs that can work at the local level.

APWA does agree with the view that additional funding is essential for needed public works infrastructure construction and maintenance. However, if we are going to be able to maximize the use of our limited financial resources, we need to invest in programs which will generate applied research of direct benefit to local governments.

We need research on technical public works subjects that academics don't usually have the interest or ability to develop. We also need research on techniques for more effective and efficient management. As long as the implementers - our local public works professionals - aren't involved in helping to set the research agenda, the funds invested will continue to have only marginal benefit to local needs. I envision having a center for the study of public works, a consortium of universities facilitated by APWA, serving as a "think tank" on public works issues, encouraging applied research and disseminating its results in a format which can truly help practitioners and the communities they serve. Your committee's support of this

concept would make a significant contribution to this effort.

APWA sees the need to expand partnerships between public works practitioners and academics, many of whom are already members of our association. We also see the need for partnerships with the private sector. We see the federal role as encouraging and facilitating these partnerships, as well as intergovernmental approaches to environmental and transportation issues.

Finally, in terms of need, we must be able to effectively participate in global infrastructure developments. We need a mechanism for quickly monitoring innovations abroad, and adapting the best of most relevant ones to our own situations or circumstances. While there are many specialized organizations (in water, transportation, etc.),. there is no single entity which looks after international public works trends and issues. There is a need for a federal role in developing this capability. We should be able to encourage more exchanges, and programs which deal with the international dimensions of public works, transportation and environmental issues.

Describe the consequences of the failure to make necessary infrastructure investments and improvements

The consequences of the failure to make the necessary investments in public works infrastructure can be summarized in one concise statement: as a nation we loose the ability to function effectively in a global economy. Failure to invest, or in the case of maintenance, reinvest, will result in the untimely and premature failure of vital infrastructure components. For example, recently a watermain break in Pennsylvania caused a major sink hole destroying a multi-story building in Allentown. In Atlanta a storm sewer collapse created a sink hole resulting in the collapse of a street and a parking lot; and caused a car to fall in, resulting in the death of the occupant.

These are but the most dramatic examples of problems which occur almost daily in every city. There are in fact tiny little time bombs waiting to explode everywhere. There are the visible problems of roads and bridges and the invisible ones such as water mains, storm sewers and sanitary sewers.

Yet, water main breaks occur daily, as do sanitary and storm sewer collapses. The results are usually not as dramatic as those I just cited, but when added together the results are significant. Those results include environmental degradation, service interruption and traffic delays.

A vast amount of our underground infrastructure is more than 50 years old, much of it is over 100 years old. What other segment of our economy operates on infrastructure more than 20 years old? Computer technology infrastructure is old and outmoded in 5 years or less. Yet the age of facilities which touch every aspect of the economy and our daily lives is measured in decades, if not generations.

These tiny little time bombs which cause these aggravating delays and troublesome environmental degradation taken individually are little more than a nuisance. Yet taken as a whole these nuisances represent a significant drain on the economy and degrade the quality of life. In addition to the delays, the cost to repair once failure occurs is many times higher than preventive maintenance or scheduled replacement.

Deferred maintenance continues to be the largest single problem facing public works officials across the country. There are so many competing needs for increasingly scarce tax dollars that maintenance is neglected in favor of more pressing, though in the long term perhaps less important, issues. These pressing issues include the proliferation of unfunded mandates, crime and the need for public safety expenditures, and the increasing responsibility of local governments in supplying social needs. Maintenance has no constituency, at least until the asset has deteriorated to the point that maintenance by replacement is the only feasible alternative remaining. Preventive maintenance is the most cost effective means of maintaining an asset. Minor repair is the next most effective means, with the most costly being major repair of repair by replacement. New construction has something of a constituency in this country, maintenance does not. As a result the deferred maintenance backlog is growing daily.

Our public works services are vital to fulfilling the broader social agenda. Unless we protect our ability to effectively compete, unless we have an infrastructure which allows industry to grow and supply jobs to the economy, not

only will we not be able to fulfill the social agenda, the social agenda will continue to grow at an ever increasing pace.

Failure to reinvest in our physical plant, our infrastructure, is a sure and certain form a deficit spending. Even though the "deficit" does not appear on the books, it is real and it will result in passing on to our children a debt which they will surely have to repay many times over.

Delineate how the federal government can facilitate infrastructure improvements

Provide a Multi-Year Capital Improvement Plan

Perhaps more important than the failure to invest enough is the need to invest correctly. Without a long term, focused strategy that is embodied in a multi-year federal capital improvement budget, the investments which are made will not achieve the most productive return. The effort must be long term, it must be sustained. We do not support public works as just a "jobs bill". We are not asking for a large, one time appropriation. We are asking that a realistic look be taken at what needs to be invested and what can be invested on a long term basis, year in and year out. This will allow our nations infrastructure providers the opportunity to size themselves for a sustained, long term program. Great inefficiencies (which are translated into higher taxpayer costs) result from programs which are up for a year or two and then down. If a long term program existed, public works agencies, consultants, contractors and suppliers could make informed, cost effective business decisions which would result in lower costs to the taxpayer.

Set Strategic Goals and Objectives

We are asking that the federal government set strategic goals so that infrastructure spending can be targeted toward achieving those goals. Public works and infrastructure investment in general exist but for one purpose, to serve the broader needs of the public good. Failure to invest wisely will result in failure to best serve the public good. If we are to keep faith with the taxpayer we must identify those strategic investments which will best serve the long

term interests of this country. When we do not spend wisely, we loose the trust of the public. That is why we contend that failure to invest wisely is perhaps more damaging than failure to invest enough.

The need for a focused vision and strategic investment choices has been under by APWA. APWA has developed a manual entitled "Public Works Management Practices." As a follow up, a study entitled "Identification of Road Blocks and Opportunities to Improve Public Works Performance" was undertaken. This study looked at twelve public works agencies throughout the United States. This study was done in cooperation with the U.S. Army Corps of Engineers Institute for Water Resources and the National Academy of Public Administration. The study is now in draft form and will be supplied to the committee once approved. Prominent in the study is the need for a sustained, long term approach to public works decisions.

Unfunded Mandates

A serious concern is the proliferation of unfunded mandates. Those which were most troubling were

- The National Pollutant Discharge Elimination System (NPDES) stormwater regulations
- The Resource Conservation and Recovery Act (RCRA) Subtitle D Municipal Solid Waste Landfill Criteria
- The Safe Drinking Water Act (SDWA) Lead and Copper Rule
- The Americans with Disabilities Act(ADA)

The study proposed the following be considered in further discussion of any federal mandates that affect local governments:

- 1. State and Federal Mandates should be issued only when accompanied by a clear statement of goals, objectives and standards.
- 2. The U.S. Congress should provide a reasonable level of funding assistance to agencies subject to federal regulations that involve substantial implementation costs.
- 3. Environmental regulations should be tied to risk assessment standards for public health and

environmental quality rather than best available technology

- 4.As far as practical, regulations and mandates should be tailored to local conditions and permit flexible solutions based on those conditions.

Unfunded mandates are distorting local and even state priorities. One of the public works officials in the metropolitan Washington D.C. area points to the fact that his city is currently spending several million dollars to retrofit the city water treatment plant for pollution control by installing a process that will have no noticeable positive effect on the environment. These are several million dollars which could be invested in productive, targeted projects that would make a difference to the public his agency is trying to serve.

Coordination of Policies and Regulations

Closer coordination of policies and regulations would greatly assist the local public works agencies in spending their scarce infrastructure dollars more prudently. The City of Philadelphia provides a good example of the need for a common sense look at policies and regulations. A public works official there states, "Many of the City of Philadelphia's Bridge Improvement Projects involve AMTRAK bridges. AMTRAK, under federal legislation, cannot be forced to participate in any of this work even though they reap tangible benefits.

"More distressing, however, is Amtrak's position that because of existing labor contracts they must perform all railroad related work with their in-house unionized workforce. Our experience is that this provision is costly and results in significant delay.

"We would prefer to competitively bid this work and would have no problem with AMTRAK bidding on it provided they would commit to the same terms and conditions as the private contractors. AMTRAK refuses to even consider this.

"We have a number of projects coming on line as does PennDOT and local counties. AMTRAK will clearly not be able to provide workforces for all needed projects. Even so, we are

not permitted to contract out. Thus, projects will probably have to be postponed resulting in potential safety problems, bridge closings and the possible loss of federal funding.

"AMTRAK should not be permitted to have it both ways. They cannot claim the work as sole source and then not perform. This is not a union issue since the private contractors bidding these projects would be unionized. This is a question of productivity and accountability."

Financing Legislation

Financing is yet another important means by which infrastructure could be facilitated. We advocate the elimination of arbitrage rebates, or at the minimum greatly increasing the annual issuance limit for arbitrage rebate. This could be accompanied by strongly enforced regulations which would prevent the abuses which were found objectionable. We also support the other methods to improve infrastructure financing suggested by the Rebuild America Coalition, of which we are a part.

Flexible Approach

One of the most important ways in which the federal government could facilitate infrastructure investment is to adopt a flexible, goal oriented approach to federal policy. ISTEA is a major step in the direction we are suggesting. This far-sighted piece of legislation incorporates the elements of local involvement, flexibility and goal setting which we firmly advocate. It is a move away from the proscriptive philosophy which has often times provided less than optimal local solutions.

This approach is distinctly in contrast to the approach taken by NEPA which in our view fosters an adversarial approach between state, federal and local government. The local implementers are in fact true environmentalists who on a daily basis have a major positive impact on the environment. They are knowledgeable and caring. NEPA would seem to presume otherwise.

Outline the roles of state, local and private sector resources in dealing with the revitalization of our nation's infrastructure.

I believe one size does not fit all, that whatever we do we must find "the right tool for the job." Governments at all levels have mutually important roles to play. The federal role should be to set goals and allow local and regional solutions to be worked out so that those goals can be achieved. Fixed, uniform and proscriptive federal standards discourage innovation and direct limited local energies and resources into less productive areas. If we only have a hammer, then we tend to see everything as a nail. We need to respect and encourage diversity in approaches - so long as positive results are achieved, and are consistent with good stewardship.

This point is very important to me as a public works administrator at the local and regional level. Not only do I see the need to more fully utilize talent at this level, but when it comes to transportation, air and water quality, flood control and many other public works infrastructure issues, regional approaches are often the only ones that make sense. We try to deal with physical problems using a political and institutional framework that just doesn't fit. Issues affecting a river basin or water shed or metropolitan economic region can involve scores of cities and suburbs (each acting as an independent political entity), possibly several states and the federal government. Fixed standards used to enforce uniformity are hammers in search of a nail. Set the goal and let communities work out the best way for them to reach it. Let us make the tradeoffs that make sense to us in our own particular circumstances.

If you focus on results, on achieving federally established goals, you will want to build in incentives for promoting local initiatives and regional approaches. This is the only way we will find the right tool for the job in infrastructure.

A purely local approach to infrastructure without any overarching direction or coordination would result in total fragmentation. A uniquely federal approach would work well in some areas, poorly in others and not at all in many. Clearly we need a balanced approach. One which accepts the validity of federal direction, but also allows for the need to have local implementation.

Summary

We at APWA believe closer coordination between policy makers and policy implementers is key to developing a sustained, focused and targeted infrastructure investment policy. We as representatives of the policy implementers are willing and anxious to work with you as you continue to provide leadership in this most important area.

As we seek to compete globally, the respective rolls of the public and private sectors will be reshaped. There is an urgent need to maximize their respective strengths. Functioning as allies, not adversaries, public/private partnerships in infrastructure will become an increasingly significant fact.

I am proud to have been able to appear before you today on behalf of the implementers of infrastructure policies and programs in local communities throughout the nation. The American Public Works Association and its network of over 25,000 members is prepared to offer their services and input in your deliberations. I will be pleased to answer questions either now, or later in writing.

DINAMO
Three Gateway Center
Pittsburgh, PA 15222
(412) 392-4550

The Association
for the Development
of Inland Navigation in
America's Ohio Valley

Written Statement

submitted to

US House of Representatives
Committee on Public Works and Transportation
Subcommittee on Investigations and Oversight

by

R. Barry Palmer
Executive Director
DINAMO
The Association for the Development
of Inland Navigation in America's Ohio Valley

Three Gateway Center
Pittsburgh, PA 15222

on

Wednesday, May 4, 1994

Mr. Chairman and Distinguished Members of the Subcommittee on Investigations and Oversight of the Committee on Public Works and Transportation, thank you for the opportunity to appear before you this morning to outline and discuss the need for modernization of the lock and dam infrastructure on the Ohio River Navigation System. I am Barry Palmer, Executive Director of DINAMO, the Association for the Development of Inland Navigation in America's Ohio Valley.

DINAMO is a non-profit, multi-state coalition of business and industry, labor and state government leaders from the Ohio Valley. Our singular purpose is to improve the economic climate in the Ohio Valley by expediting the modernization of the lock and dam infrastructure on the Ohio River and its navigable tributaries. The governors of Illinois, Indiana, Kentucky, Ohio, West Virginia, and Pennsylvania have appointed representatives on our Executive Committee and Board of Directors.

Launched in March 1981 to overcome more than 20 years of the neglect of capital improvements on the Ohio River Navigation System, DINAMO has worked closely with the US Army Corps of Engineers, at the District levels in Pittsburgh, Huntington, Louisville, and Nashville, at the Division level in Cincinnati, and at the Headquarters level in Washington, D.C. We have worked with the Corps of Engineers to get our critically needed projects for construction authorization through the feasibility review processes, we have worked with the Corps of Engineers to "streamline" their process, we have worked with them to execute their program management initiatives, and now we are working with them to find ways to reduce the costs of capital investment in our nation's waterways infrastructure.

We have worked very closely in partnership with the Corps of Engineers since 1981. I have found their personnel to be highly skilled, technically competent, and cooperative. They balance economic development objectives with environmental goals. They want to do the right things for John and Mary America. The Corps of Engineers are composed of "can do" people: we review their work, criticize privately and constructively, and are advocates for their lock and dam modernization projects in the Ohio Valley.

The primary framework for our lock and dam modernization objectives was the National Waterways Study, which was completed in 1981. The study indicated: **"The greatest potential adverse impact on traffic is on the Ohio River System where as much as 65 million tons could not physically be passed through locks ... If the minimum forecast traffic level is to be served by 2003, additional capacity would be needed at 14 locks (28 locks under the maximum forecast traffic level)."** There has been no comparable effort suggesting that there should be any deviation from the recommendations outlined in the National Waterways Study. The progress toward a national inland waterways infrastructure modernization program should not be diminished in any manner.

Essentially the National Waterways Study identified on the Ohio River Navigation System 16 facilities that needed major rehabilitation or replacement by the year 2003. The projects identified in the original list are either improved, under construction, in the engineering and design phase of development, or under study for improvement. The proper improvement action about which we have achieved consensus with the Corps of Engineers is as follows: 1) major rehabilitation of **Emsworth, Dashields, and Montgomery Island Locks and Dams** on the Ohio River near Pittsburgh, PA (completed in the mid-1980's); 2) replacement of the **Gallipolis Locks** and rehabilitation of the dam (now called the Robert C. Byrd Locks and Dam), Ohio River, OH/WV; 3) replacement of **Lock and Dam 7**, Monongahela River, PA, with the almost completed (Summer 1995) Grays Landing Lock and Dam; 4) replacement of **Lock 8**, Monongahela River, PA, with nearly completed Point Marion Lock (October 1994); 5) construction of a new lock at the **Winfield Locks and Dam**, Kanawha River, WV (to be completed in 1997); 6) replacement of **Locks and Dams 52 and 53**, Ohio River, IL/KY, with the Olmsted Locks and Dam near Olmsted, Illinois (under construction); 7) improvements in the Lower Monongahela River affecting **Locks and Dams 2, 3 & 4**, near Pittsburgh, PA (now ready for a construction start); 8) construction of an additional lock at the **McAlpine Locks and Dam**, IN/KY, near Louisville, KY (now ready for a construction start); 9) construction of a new lock at the **Marmet Locks and Dam**, Kanawha River, WV (ready for construction authorization by the Congress); 10) construction of a new lock at the **Kentucky Lock**, Tennessee River, KY (ready for construction authorization by the Congress); and 11) construction of additional capacity at the **Uniontown Locks and Dam**, Ohio River, IN/KY (now under study by the Corps of Engineers). The magnitude of that investment will exceed $4 billion when completed. (An outline of the costs and benefits of these improvements is attached).

When we testified before Congressman Robert A. Roe's Sub-committee in 1982, we pegged the investment need at about $2.5 billion.

The Water Resources Development Act of 1986 may have been the most important piece of legislation affecting lock and dam improvements in the Ohio Valley since the program for replacement of the entire system got underway in 1953. Aside from the most recent improvements, the Ohio River Navigation System contains a mix of turn-of-the-century structures and those modernized during the 1950's and 1960's. The original navigation system was completed during the Hoover Administration in the 1920's. By the end of World War II, major advances in technology and an unprecedented expansion in traffic had rendered most of the old works obsolete. During the 17 years, 1953-1970, fourteen (14) new projects were placed under construction on the Main Stem Ohio River; all were completed. Progress then came to a halt, and for the next 17 years, 1970-1987, apart from a stopgap facility near the mouth, not a single new project was undertaken on the Ohio.

The Water Resources Development Act of 1986 literally opened the river for improvements to our waterways infrastructure. The landmark legislation provided construction authorization of seven projects nationally, including Gallipolis, Grays Landing, Point Marion, and Winfield; increased the tax on diesel fuel consumed by towboats operating on the system from 10 cents per gallon to 20 cents per gallon by 1995; and pegged cost-sharing from the taxes gathering in an Inland Waterways Trust Fund to fund one-half of the cost of modernizing locks and dams.

The Water Resources Development Act of 1988 provided construction authorization for the Olmsted Locks and Dam, Ohio River, IL/KY (replacing Locks and Dams 52 and 53). The Water Resources Development Act of 1990 authorized construction of a new lock at McAlpine Locks and Dam, Ohio River, IN/KY. The Water Resources Development Act of 1992 provided construction authorization for improvements on the Lower Monongahela River Locks and Dams 2, 3 & 4. Cost-sharing requirements provided that one-half the cost of project modernization come from the Inland Waterways Trust Fund.

The Marmet Locks and Dam project, Kanawha River, WV, and the Kentucky Lock Addition project, Tennessee River, KY should be authorized for construction in the next Water Resources Development Act. The Kentucky Lock Addition project has already been approved by the Chief of Engineers. The Feasibility Reports for both projects are ready for expeditious action by Headquarters.

The Ohio Valley navigation system needs are similar to those in other regions of the nation. The long time between authorization of the Hannibal Locks and Dam, Ohio River, OH/PA (1964) and construction authorization of the Robert C. Byrd Locks and Dam, Ohio River, OH/WV (1986) was not helpful, because we built up a lot of demand for improvements while waiting for decisions on taxes and cost-sharing. **Today the needs for major rehabilitation and replacement are outstripping the amount of money available for the entire system, at least under the current political framework.**

Currently the 19 cents per gallon tax, scheduled to reach 20 cents per gallon in 1995, is generating about $80 million annually in revenue gathering in the Inland Waterways Trust Fund. Currently the balance in the Trust Fund is approximately $200 million. The agreements reached on the currently authorized projects call for use of Trust Fund monies to finance 50 percent of the project costs. Obviously without additional revenue the construction schedules for projects will be extended. There will be more regional conflict for monies for water resource development. And there will be pressure from the public sector for increased tax revenue. At the same time the value of the revenue, because of the effects of inflation, will continue to diminish the amount of resources dedicated to rebuilding our nation's waterways infrastructure.

This much is certain: **the waterways are integral to the economies of the interior regions of America.** More than 250 million

tons of commodities move on the Ohio River Navigation System. There are 72 steam fired or hydroelectric generating plants on the Ohio River system. There are more than 520 chemical processing plants along our region's waterways. Steel mills, fuel oil and gasoline terminals and refineries, aluminum smelters, coal terminals, docks for aggregates, and intermodal terminals for rail and trucking redistribution, industrial and municipal water supply, boat marinas and recreational facilities: all are inextricably linked to jobs and a way of life for millions of Americans. DINAMO commissioned the late Dr. Marvin Barloon, Carlton Professor Emeritus of Economics, Case Western Reserve University, to conduct a series of reports detailing the importance of the Ohio River navigation system to the economy of the region. Copies of these reports are attached.

Inland waterway investment strategies involve communities and governments and the private sector as partners in their own destinies. The navigation system is the product of a joint venture in which the Federal government is just one of the parties which makes it possible. Other partners in this joint venture build and maintain the ports and terminals, storage facilities, access roads, and the manufacturing, refining and other plants that provide jobs. None of these partners -- including the Federal government -- could have done it alone.

Last year President Clinton's FY 1994 Budget carried a proposal for recovery of all Corps of Engineers expenditures for operating and maintaining America's inland navigation system. The proposal sought to recover about $450 million annually by imposing an additional tax of $1 per gallon on diesel fuel consumed by towboats operating on the system. Included as an attachment to this testimony is a summary of the research assessing the impact of this tax proposal. In brief, the research revealed that as many as 33,000 jobs related and linked to coal production and distribution would have been lost from the Ohio Valley. Our aluminum industry in the region would have been rendered uncompetitive, and thousands of chemical industry related jobs would have been threatened. In short this tax would have been a heavy jolt to basic industry and agriculture that depend on barges to move massive quantities of raw materials, farm crops, and fuels. The evidence shows that the low rates for inland water freight are proof that the savings in transportation costs afforded by Federal investments are being passed on to the shippers, receivers, and consumers.

Barges transport one-half of the nation's export grain, 30 percent of the petroleum and petroleum products, and a quarter of the coal for domestic electric utilities and export. But the real value of waterway transport cannot be related in tonnages alone. Attached is a summary of a study conducted by Dr. D.E. Matzzie, Ph.D., P.E., Senior Associate, Wilbur Smith & Associates, in 1984 outlining the related sales effects, earnings and jobs in the Ohio Valley states. Commerce, like water, flows along the lines of least resistance. Production and industry have gravitated to the areas, and along the routes, of lowest costs. The industrial and agricultural development

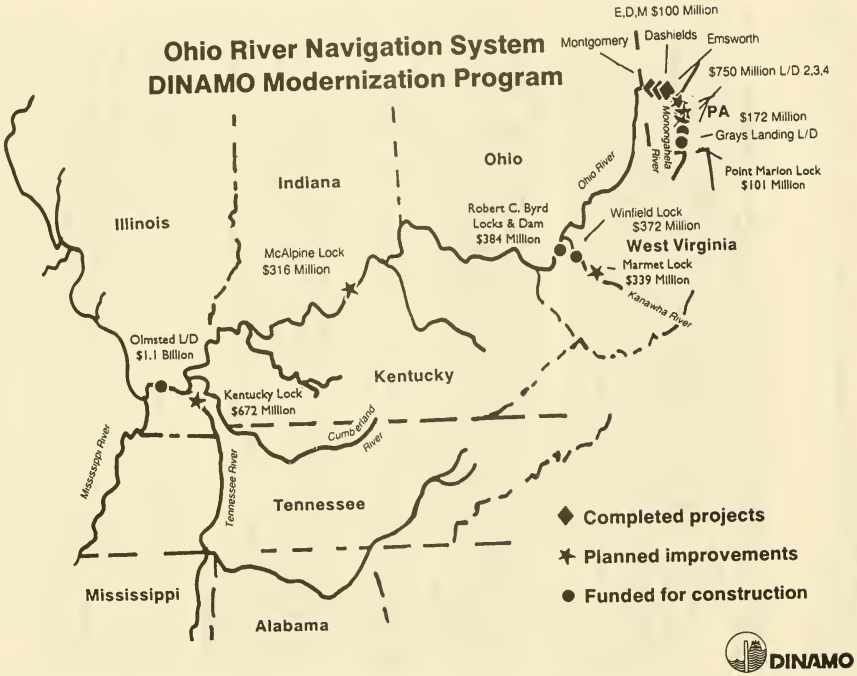
that has occurred along the inland waterway system of interior America has benefitted this Nation beyond measure.

For generations, the major export from America's river valley was its people, tired of the endless cycle of either too much or too little water. Multi-purpose water resources development transformed the regional economies of interior America. Often spurred on by inland waterway access to raw materials and growing markets, the economic development of our river valley economies since World War II has changed that equation. Even the Congressional Budget Office, which has criticized Federal water resources in the past, concedes that inland navigation promotes regional economic development and that Federal dis-investment in the form of a cost-recovery fuel tax will result in lower incomes.

In a 1992 report by the Institute for Water Resources, "The 1992 Inland Waterway Review," one summary of a rate analysis table indicated that the average relative net rate savings of water transportation was $8.61 per ton. This data means for every ton of a commodity moving on our nation's waterways the next lowest alternative cost of moving that ton was $8.61 higher. With more than 520 million tons of commodities (1990) moving on fuel-taxed waterways, the nation received benefits (transportation savings) of nearly $4.5 billion. **Hence for nearly every dollar the federal government is spending for operating and maintaining the system (currently about $450 million), the nation is being rewarded by a $10 return.**

We believe the Federal government needs to continue the responsibility for developing, operating and maintaining the system -- a procedure vindicated by its success over the last 200 years -- engaged 200 years ago. We have a tremendous inland navigation system in place, the envy of others throughout the world. Other nations with rivers located in the interior portions of their countries would love to have an infrastructure comparable to ours. Tremendous public good flows from such a system, and the benefits accrue to all Americans.

Further taxing a region of this nation already trying to adjust to the changing economic forces of the modern day would diminish the industrial base dependent on the waterways system. The effect of this policy will be reverse investment, which in turn will lead to a downward spiral of traffic on our waterways. A downward spiral of traffic will create a requirement for more taxes in our region. Some tributaries will close, then others, and then in a relatively short time, the major export from America's river valleys will again be neither crops nor coal, but people.


Ohio River Navigation System
DINAMO Modernization Program
E,D,M $100 Million
Montgomery
Dashields
Emsworth
$750 Million L/D 2,3,4
PA
$172 Million
Grays Landing L/D
Point Marion Lock
$101 Million
Monongahela River
Ohio River
Ohio
Indiana
Illinois
Robert C. Byrd
Locks & Dam
$384 Million
Winfield Lock
$372 Million
West Virginia
Marmet Lock
$339 Million
Kanawha River
McAlpine Lock
$316 Million
Olmsted L/D
$1.1 Billion
Kentucky
Kentucky Lock
$672 Million
Cumberland River
Mississippi River
Tennessee River
Tennessee
Mississippi
Alabama
Completed projects
Planned improvements
Funded for construction
DINAMO

Benefits of Ohio Valley Lock and Dam Improvement Projects

(millions of dollars)

Project Name/Location	Fully-funded Cost	First Cost	Average Incremental		Benefit/Cost Ratio
			Cost	Benefit	
Robert C. Byrd L/D, Ohio River, OH/WV (formerly Gallipolis L/D)	384.0	222.1	12.6	161.9	12.9
Grays Landing & Point Marion L/Ds Monongahela River, PA	273.3	162.7	29.6	64.6	2.2
Winfield Lock, Kanawha River, WV	372.0	152.6	13.3	54.4	4.1
Olmsted L/D, Ohio River, IL/KY (replacing L/Ds 52 & 53)	1,110.0	832.0	124.8	539.3	4.3
McAlpine Lock, Ohio River, IN/KY	316.0	219.4	19.0	34.2	1.8
Monongahela River L/Ds 2, 3, & 4, PA	750.0	734.7	9.0	38.7	4.3
Marmet Lock, Kanawha River, WV	339.0	252.7	16.8	32.0	1.9
Kentucky Lock Addition Tennessee River, KY	672.0	458.6	31.6	53.8	1.7

source: US Army Corps of Engineers
3/17/94

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Measures of Economic Activity Associated with Ohio River System Waterborne Commerce: 1984 *

AFFECTED ECONOMIC SECTORS	ALABAMA $ SALES EFFECTS	ALABAMA $ EARNINGS	ALABAMA JOBS	ILLINOIS $ SALES EFFECTS	ILLINOIS $ EARNINGS	ILLINOIS JOBS
1 Agricultural Products & Services	98,118,542	29,703,883	4,549	436,954,522	92,676,526	8,896
2 Coal & Miscellaneous Mining	127,968,474	28,622,753	863	354,545,509	104,876,762	2,666
3 Chem, Pet Ref, Crude, N Gas	149,195,913	31,258,027	1,030	412,061,863	50,664,045	1,542
4 Primary Metals	113,347,600	33,626,049	1,163	156,870,894	30,699,625	998
5 General Manufacturing	167,949,505	58,941,325	3,452	336,252,808	114,564,556	5,043
6 Elect, Gas, Water, Sanitation	191,214,616	65,923,058	2,077	132,352,159	30,923,324	813
7 Transportation	54,614,879	20,167,897	916	90,310,945	36,633,443	1,424
8 Construction, Maint, Repair	65,496,061	20,234,866	1,256	62,715,706	24,154,173	1,008
9 Business Services	216,652,205	107,459,012	7,947	604,839,517	215,775,271	13,448
TOTAL	1,184,557,795	395,736,870	23,253	2,586,903,923	700,767,725	35,838

AFFECTED ECONOMIC SECTORS	INDIANA $ SALES EFFECTS	INDIANA $ EARNINGS	INDIANA JOBS	KENTUCKY $ SALES EFFECTS	KENTUCKY $ EARNINGS	KENTUCKY JOBS
1 Agricultural Products & Services	331,600,016	72,439,113	10,682	278,917,496	75,154,589	9,043
2 Coal & Miscellaneous Mining	391,505,902	128,329,571	3,304	1,330,778,225	462,554,439	14,036
3 Chem, Pet Ref, Crude, N Gas	456,745,552	52,277,054	1,495	582,511,070	87,501,758	2,556
4 Primary Metals	169,230,146	48,805,401	1,469	366,271,947	89,625,724	2,873
5 General Manufacturing	212,782,564	62,899,866	2,714	646,117,959	181,047,288	9,811
6 Elect, Gas, Water, Sanitation	177,725,759	53,268,155	1,631	255,840,483	58,896,356	1,947
7 Transportation	75,222,827	32,899,897	1,419	154,599,100	75,072,996	3,695
8 Construction, Maint, Repair	70,367,667	20,492,336	1,077	100,873,953	54,546,733	3,094
9 Business Services	411,823,835	168,972,497	12,779	1,019,258,017	413,729,765	31,742
TOTAL	2,297,004,268	640,403,870	36,570	4,735,168,250	1,498,129,626	78,797

AFFECTED ECONOMIC SECTORS	OHIO $ SALES EFFECTS	OHIO $ EARNINGS	OHIO JOBS	PENNSYLVANIA $ SALES EFFECTS	PENNSYLVANIA $ EARNINGS	PENNSYLVANIA JOBS
1 Agricultural Products & Services	290,761,657	78,374,145	10,147	14,635,570	7,348,072	1,091
2 Coal & Miscellaneous Mining	528,272,599	181,962,141	6,456	403,412,761	159,815,586	4,999
3 Chem, Pet Ref, Crude, N Gas	944,215,416	119,545,597	3,198	467,856,718	66,813,410	1,927
4 Primary Metals	579,334,528	204,924,398	5,990	570,402,439	157,991,474	4,779
5 General Manufacturing	505,444,399	144,886,622	6,684	382,368,213	119,400,321	5,673
6 Elect, Gas, Water, Sanitation	327,339,660	91,723,970	2,975	350,220,093	105,208,291	3,168
7 Transportation	157,163,187	72,366,367	2,975	130,972,470	64,027,585	2,856
8 Construction, Maint, Repair	135,088,343	63,671,872	3,018	129,788,276	54,298,406	2,614
9 Business Services	740,731,923	371,470,968	26,834	596,576,215	291,188,062	20,482
TOTAL	4,208,371,692	1,328,946,080	68,277	3,046,232,755	1,026,091,207	47,589

AFFECTED ECONOMIC SECTORS	TENNESSEE $ SALES EFFECTS	TENNESSEE $ EARNINGS	TENNESSEE JOBS	WEST VIRGINIA $ SALES EFFECTS	WEST VIRGINIA $ EARNINGS	WEST VIRGINIA JOBS
1 Agricultural Products & Services	120,408,667	34,905,152	6,974	11,908,819	10,377,403	2,134
2 Coal & Miscellaneous Mining	195,637,472	52,197,678	1,908	1,266,155,274	475,501,840	13,259
3 Chem, Pet Ref, Crude, N Gas	133,208,247	27,324,503	885	2,464,272,607	288,228,955	8,058
4 Primary Metals	102,298,540	84,579,412	2,897	102,636,349	39,471,486	1,098
5 General Manufacturing	177,058,285	61,109,808	3,362	219,526,397	60,532,987	5,754
6 Elect, Gas, Water, Sanitation	77,516,197	71,388,991	2,473	200,551,283	31,391,146	1,028
7 Transportation	72,328,662	36,336,212	1,518	158,900,789	49,971,389	1,792
8 Construction, Maint, Repair	78,187,362	37,477,292	2,292	117,847,739	52,789,554	1,296
9 Business Services	294,175,828	161,126,535	11,363	714,435,025	279,563,459	17,527
TOTAL	1,250,819,060	566,446,083	33,672	5,256,234,282	1,268,028,219	51,946

* There are a total of 375,942 jobs associated directly or indirectly with waterborne commerce on Ohio River navigation system

The Ohio River Navigation System and Associated State Economic Activity

by Dr. D.E. Matzzie

In 1987 DINAMO commissioned a study by Dr. D.E. Matzzie, Ph.D., P.E., Senior Associate, Wilbur Smith Associates, entitled "The Ohio River Navigation System and Associated State Economic Activity." The report can be obtained in its entirety by writing to DINAMO at Three Gateway Center, Pittsburgh, PA 15222. A summary of the report follows:

An analysis was made of the importance of waterborne commerce using the Ohio River navigation system to the economies of the eight states directly served by the system (Alabama, Illinois, Indiana, Kentucky, Ohio, Pennsylvania, Tennessee and West Virginia). This analysis made use of traffic data collected by the Corps of Engineers and RIMS II model developed by the Bureau of Economic Analysis of the US Department of Commerce.

The values of the commodities moving among the states indicate the economic linkages within each state and between each state and other regions. The values of traffic movements within a given state are used to measure the scale of economic importance of the waterway to various sectors of economic activity in the states. These economic indicators are given in terms of output, which is a proxy for sales, earnings, and jobs related to waterborne traffic.

The results of this analysis is given on the reverse of this page. It is notable that the output and earnings associated with the traffic is in the billions of dollars annually, and jobs are in the tens of thousands. These results indicate the importance of the Ohio River navigation system to the economies of each state.

DINAMO

October 1991

DINAMO ECONOMIC REPORT

The Association for the Development of Inland Navigation in America's Ohio Valley • Three Gateway Center • Pittsburgh, PA 15222

The Chemicals Industries of the Ohio Valley and the Modernization of the Ohio River System

Marvin Barloon

Since October 1989, DINAMO has published a series of Economic Reports featuring the importance of lock and dam modernization on the Ohio River navigation system to coal, petroleum, electric utilities, and grain in the Ohio Valley. This report, The Chemicals of the Ohio Valley and the Modernization of the Ohio River System, culminates the nearly 40 year involvement of the late Professor Marvin J. Barloon, Carlton Professor of Economics (Emeritus), Case Western Reserve University, in furthering improvements to our nation's waterways. Professor Barloon died on September 1, 1991 at the age of 85. This report is the last piece of work completed by Professor Barloon.

The chemicals industry is similar to other industries along the river system, such as steel and coke-making plants, in that it relies on low-cost water transportation to efficiently move its products. However, the chemicals industry has distinctive factors that make its identification quite different from other industries. For example, chemicals industries are identified by processes rather than by product lines. The chemicals industry represents products as diverse as medications, plastics and fibers, as well as having industrial applications. Professor Barloon has identified more than 520 chemicals plants along the Ohio River and its navigable tributaries. The orderly modernization of the Ohio River navigation system infrastructure is vital to the maintenance and development of chemicals industry-related jobs in this region.

Character and Logistics of the Chemicals Industry

Most industries are identified by their product lines, such as steel, shoes, automobiles, etc. The chemicals industry, however, cannot be so identified. The industry produces an enormous variety of highly dissimilar products: medicines, wrappings (for food, clothing, and other retail merchandise), automobile parts, fibers for clothing and furnishings, building materials, insulation, and footwear, among many other products. The contribution of chemicals to health is especially notable, not only in the production of medicines but also in the almost universal use of sealed plastic wrappings in self-service food retailing.

Rather than by product, the chemicals industry is identified by process. Generally, a plant that produces products by means of chemical reactions is a chemi-

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Photo: Pittsburgh District, US Army Corps of Engineers

Character and Logistics *(continued from page 1)*

cals plant. Such establishments as blast furnaces and oil refineries also employ chemical processes but, being product specific, are not ordinarily classified as chemicals plants.

Most chemical reactions produce several products and intermediates which can be used to produce still others. The products have little or no resemblance to the materials. For example, oil refineries and coke ovens cast off tar as a by-product, a black, sticky substance used to fill cracks in the pavement. With a series of complex reactions, the chemicals industry converts the tar into nylon for women's hosiery, into the explosive, TNT, and into other products which neither look, taste, smell, nor feel like tar.

Benzene is converted into medications, such as aspirin and oil of wintergreen as well as certain plastics. Catalytic cracking by oil refineries produces not only gasoline and other fuels and lubricants, but also a variety of oils and gasses which the chemicals industry converts into synthetic rubber, plastics, textiles, detergents, and the familiar bug and weed killers for lawns and farms.

Industrial chemicals are essential to basic industries, such as steel, paper, and glass. The paper and print which you are now reading required chemicals for their production

Logistics of Waterborne Chemicals The inland waterway system, especially the Ohio Valley segment, is critical to the industry's logistics. The preponderance of the Ohio Valley sector is devoted to finished products. Crude and partially processed chemicals are shipped from mineral origins and oil refineries via the Gulf Intracoastal Waterway, the Mississippi, and the Ohio River to Ohio Valley plants for finishing. Final products are then distributed, in part by water, but largely by rail and truck, throughout the Northeast Quadrant of the United States.

This is not to imply that all crudes and intermediates used in the region come from outside the Valley. Ohio Valley oil refineries and coke ovens are also important sources. In addition, a substantial volume of industrial chemicals are shipped by barge from Ohio Valley chemicals plants to riverside industries.

Economy of Waterway Transportation River barging is incomparably low-cost for commodities suited to this mode. In 1990, the Corps of Engineers reported the transportation cost per ton of chemicals on the Ohio and Mississippi Rivers at about one cent per mile. Rail costs averaged between two and three times as much. At one cent per mile, the cost of shipping a ton of chemicals a thousand miles by water is about equal to the price of a gallon of gasoline.

Waterway schedules, however, are imprecise, and individual shipments are very large. In a railway car, a typical barge load of chemicals is equal to about fourteen carloads, and the load of a "flotilla" of barges (two) lashed together as a single vessel unit on the Mississippi River may run as high as 40,000 tons. Therefore, the rivers carry principally commodities which can be moved in large tonnages, including crude chemicals, intermediates, and those finished products adaptable to large shipments.

The large quantities of crudes and intermediates required in the Ohio Valley for further processing explains why most of the Valley's waterborne chemicals are inbound. In 1988 (the latest year reported), the Ohio River System moved 13.0 million tons of chemicals, an increase from only 8.7 million ten years previously. Of the 13.0 million tons, 75.8 percent came from outside the Ohio Valley. Galveston Bay and the reach of the Mississippi River downtown from Baton Rouge were the principal origins. An additional 16.8 percent were shipped within the Valley, and the small remainder from Ohio Valley origins went to various Mississippi Valley and Gulf Coast destinations.

The inbound chemicals movement is characterized by extremely long hauls. From Galveston to Louisville the waterway distance is 1,526 miles; from Baton Rouge it is 1,220. The average haul per ton of all commodities on the nation's inland waterways in 1988 was 457.5 miles.

A summary of waterborne chemicals movements on the Ohio River Systems in 1988 appears in Table I.

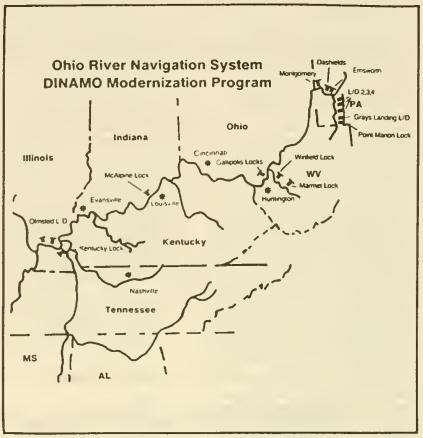
Table I: Chemicals Waterborne on the Ohio River System in 1988; Regional Origins and Destinations

	Ton	Percent
I. Inbound To Ohio Valley		
From:		
Gulf Coast	4,196,875	32.5
Miss. River, B. Rouge to Gulf	4,652,311	35.8
Total from Below B. Rouge	8,849,186	68.1
From Central and Upper Miss. Basin	999,233	7.7
Total Inbound to Ohio Valley	9,848,419	75.8
II. Outbound From Ohio Valley:		
To Miss. Basin and Gulf Coast	957,873	7.4
III. Total Inbound and Outbound	10,806,292	83.2
IV. To/From Points Within Ohio Valley	2,195,284	16.8
V. Total Chem. Movements on Ohio River System	13,001,576	100.0

*Of the total from Gulf origins, 1,500,743 tons were inbound via the Ten-Tom; the remainder via the Mississippi River.

*Of the total oubound from the Ohio Valley, 78,283 tons were outbound via the Ten-Tom; the remainder via the Mississippi River

Impact on Chemicals in Respective Ohio Valley Areas



The Tennessee Valley The Tennessee River flows from Knoxville, Tennessee, 652 miles westward to Paducah, Kentucky, where it joins the Ohio, passing through both eastern and western Tennessee, as well as northern Alabama and western Kentucky. In 1980, the Tennessee carried 29 4 million tons of freight, in 1988, 47 1 million tons

Of the total 1988 tonnage, 3.36 million consisted of chemicals, most of which transited the congested Kentucky Lock near the mouth The Kentucky Lock transits included movements into and from the Tennessee Valley and through movements between the Tennessee-Tombigbee Waterway (Ten-Tom) and the Ohio River The total tonnage of chemicals via the Kentucky Lock amounted to about 2.38 million. The remainder consisted of movements both originating and terminating on the Tennessee and movements to and from the Ten-Tom

In 1987, there were 75 chemical plants in four metropolitan areas on the Tennessee River, including Chattanooga, TN, Knoxville, TN, Florence, AL, and Huntsville, AL The chemicals transited via Kentucky Lock amounted to an average of 31,677 tons per plant. Employees and payrolls are reported by the Bureau of the Census for only the Chattanooga area, the locality of 39 of the 75 plants. Extrapolating from the reported 39 to the 75-plant total, the tonnage transiting the Kentucky Lock amounted to something like 317 tons per chemicals employee, which **translates into an inferred 25 pounds per dollar** of payroll. Stated another way, in 1988, the Kentucky Lock transited about 1.27 tons of chemicals per man-day of work in the Tennessee Valley chemicals industry.

These figures are imprecise and are offered merely as indicators of general magnitudes. It may be noted that the 75 plants are only those in the four metropolitan areas Furthermore, an unreported portion of the tonnage at the Kentucky Lock does not serve Tennessee Valley chemical plants, but consists of production from other regions shipped to Ohio Valley consumers

The Kentucky Lock is not the only project of concern to the Tennessee Valley The Olmsted project on the Lower Ohio is also important. In addition to the tonnages inbound via the Ten-Tom Waterway in 1988, 680 thousand tons of chemicals reached the Tennessee Valley via the Mississippi and Ohio Rivers from Gulf Coast and Mississippi Valley origins. An additional 240 thousand tons moved outbound to the same areas, for a total of 920 thousand tons carried via the Mississippi and Lower Ohio Rivers to and from the Tennessee. All of this tonnage had to move not only through the congested Kentucky Lock, but, in addition, via the dilapidated works in the Olmsted reach

For movements to and from the Upper Ohio Valley, similar observations may be made. Chemicals from the Pittsburgh District (including the Monongahela River) have to traverse some or all of the six antiquated installations in the Pittsburgh area and, in addition, those at Gallipolis and McAlpine before arriving at the mouth of the Tennessee. Those moving between the Tennessee and the Louisville and Huntington Districts must contend with the McAlpine bottleneck as well as the Kentucky Lock. In 1988, about 125 thousand tons of chemicals moved on these routings.

The Cumberland and Green Rivers In 1988, consignees on these two rivers received 608 thousand tons of chemicals from the Gulf Coast and the Mississippi and Illinois Rivers, all of which transited the Olmsted reach. An additional 48 thousand tons moved from the Cumberland into the Tennessee River, and 21 thousand tons upstream on the Ohio to Kanawha River destinations, the latter requiring transits at McAlpine, Gallipolis, and Winfield.

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Impact on Chemicals

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Of the metropolitan areas on these rivers, the Census reports chemical plants only for the eight-county area of Nashville, TN, on the Cumberland, and for this only the number of plants (47). In 1988, 391 thousand tons of chemicals were shipped and received on the Cumberland, the equivalent of 8,319 tons per plant in the Nashville area. Using Tennessee state-wide ratios, it may be inferred that those movements represented somewhere in the neighborhood of 50 tons per chemical industry employee, or 3.5 pounds per dollar of payroll.

Every ton of chemicals moved on these two rivers transits one or more of the antiquated works to be replaced, thus the benefits of the projected improvements appear to be substantial.

The Louisville Engineer District-Ohio River. This district extends from the mouth of the Ohio River upstream for 572 miles to the vicinity of Aberdeen, OH, and comprises 58.3 percent of the entire length of the river. The district includes the metropolitan areas of Evansville, IN, Owensboro, KY, Louisville, KY, and Cincinnati, OH. It ships and receives more chemicals by water than any other reporting area in the Ohio Valley, a total in 1988 of 5.75 million tons.

About 76 percent of the total chemical movements serving the Louisville Engineer District consists of transits via the antiquated Ohio River Locks 52 and 53 near the mouth (see Table II). About 3.7 million tons of the inbound chemicals (some 85.5 percent) originated on the Gulf Coast and the Mississippi River below Baton Rouge, the remainder in the central and upper Mississippi Valley. It is clear that expeditious action in this reach is of the highest priority for chemicals movements serving the Louisville District. The McAlpine structure at Louisville is also of substantial importance. About 97.9 percent of total receipts and shipments of chemicals in the Louisville District are subject to the constraints of outmoded navigation works.

The tonnage reported for McAlpine in Table II is only that portion of the transits received or shipped in the Louisville District. Total transits of chemicals at McAlpine in 1988 are reported as 6,151,324 tons, most of which was through traffic.

The importance of a modernized, efficient navigation system to the chemicals industry of the Louisville District (including the cities of Cincinnati and Louisville) is particularly striking. In 1987, there were 195 chemical plants in these two metropolitan areas. The tonnage of waterborne chemicals received and shipped by the two ports averaged 12,962 tons per plant. The 195 plants in the two cities employed 19,400 workers, and the tonnage shipped and received on the Ohio by these ports averaged 130.4 tons per worker. (These tonnages do not include chemical fertilizers or fertilizer materials.) Something of the relationship to financial results is indicated by the fact that for each $5,000 of sales by the 195 plants, 1.9 tons of chemicals were shipped or received by water in the two metropolitan areas.

The Huntington, West Virginia, District; Ohio River. This district extends from the upstream boundary of the Louisville District 282 miles to the vicinity of Sisterville, West Virginia. It contains two metropolitan areas, the Huntington-Ashland area (WV,KY,OH) and Parkersburg-Marietta (WV,OH).

Table III presents the receipts and shipments of chemicals in the Huntington District in 1988. As is true in the Louisville District, most of the movement consists of transits via the reach of outmoded L/D's 52 and 53 (Olmsted reach) near the mouth of the Ohio, inbound from the Gulf Coast and the Mississippi Valley

Table II: Waterborne Chemicals Received and Shipped In The Louisville Engineer District-Ohio River (1988)

	Tons		
	Inbound	Outbound	Totals
Via Locks, Nos. 52 & 53, Ohio R. (Olmstead Reach) (From & To Gulf & Miss. Valley)	4,308,622	88,556	4,397,178
Via Kentucky Lock (Tennessee River)	78,843	5,215	84,058
Via Kentucky Lock (Louisville)			1,075,169
Via Winfield & Gallipolis (Kanawha R.)	6,751	3,651	10,402
Via EDM* & Gallipolis (Pittsburgh Dist.)	57,761	4,975	62,736
Total Constrained Tonnage	4,451,977	102,297	5,629,543
Unconstrained Tonnage			121,530
Total Tons of Chemicals Received & Shipped by District			5,571,073

*EDM refers to Emsworth, Dashields, and Montgomery Island Locks and Dams on the Ohio River

Source: US Army Corps of Engineers

Table III: Waterborne Chemicals Received and Shipped In The Huntington Engineer District-Ohio River (1988)

	Tons		
	Inbound	Outbound	Totals
Via Locks Nos. 52 & 53, Ohio R. (Olmsted Reach) & McAlpine (From & to Gulf & Mississippi Valley)	1,232,655	208,646	1,441,301
Via McAlpine Only	63,065	58,465	121,530
Via Gallipolis & Winfield (Kanawha River)	----	39,461	39,461
Via EDM* & Gallipolis	2,800	153,855	156,655
Via Locks Nos. 2, 3 & 4, Monongahela River	26,045	----	26,045
Total Constrained Tonnage	1,324,565	460,427	1,784,992
Unconstrained Tonnage			252,668
Total Tons of Waterborne Chemicals Received and Shipped by District			2,037,660

(Data include the Big Sandy River)

*EDM refers to Emsworth, Dashields, and Montgomery Island Locks and Dams on the Ohio River

Source: US Army Corps of Engineers

These movements were 70.7 percent of the total in 1988.

It is notable also that practically all of the chemical movements serving the Huntington District have to transit two or three of the antiquated and worn-out works now programmed for modernization.

The Bureau of the Census reports a 1987 total of 34 chemical plants in the Huntington District counties bordering the Ohio River. The 1988 tonnage of chemicals received and shipped by water in the district averaged 59,931 tons per plant. The Census reports employment and sales for only 29 plants in two metropolitan areas. For these, the waterborne tonnage was 351 tons per employee and 4.5 tons for each $5,000 of sales by these plants. These figures are merely indicative and are probably on the high side because of inclusion of shipments to Ohio Valley consumers from outside the Valley.

The Kanawha River Valley The Kanawha River discharges into the Ohio 715 miles upstream from its confluence with the Mississippi. On the Kanawha, only 31 miles above the mouth, the 56' x 360' Winfield Locks constrict entrance to the entire Kanawha Valley. The industrial area most seriously affected is Charleston, the state's capital city, some 27 miles upstream from Winfield.

Waterborne chemicals are a substantial component of the economy of West Virginia. On the one hand, they provide essential materials for numerous other industries. On the other, their operations contribute directly to income. In 1987, the chemicals industry of the Charleston area alone shipped products with a value equal to 14.8 percent of that of all manufacturing industries in the entire state of West Virginia. Additional chemicals operations on the Ohio River in the areas of Huntington, Parkersburg, Weirton, and Wheeling share in the water-based character of this industry.

The chemicals industry is central to the Charleston economy. In 1987, chemicals provided 85.4 percent of the dollar value of the area's shipments of manufacturers, and 54.6 percent of manufacturing payrolls. In the Charleston chemicals industry, the average annual payroll per employee in 1987 was $35,769; all other manufacturing in the area was only $28,164.

The chemicals industry logistics are structured on waterborne receipt and shipment. For the 25 chemical plants in the area, receipts and shipments on the Kanawha averaged 38,831 tons per plant and 186.7 tons per employee in 1987. These tonnages may be modified to allow for some inclusion of shipments from outside the Valley to Charleston consumers. Nevertheless, they measure significantly the economic drag of congestion at Winfield on the critical industry.

Because of the location of West Virginia in the Upper Ohio Basin, Winfield is not the only obsolete navigation structure hampering the region's traffic. Most of the chemical movement is long-haul and therefore must travel most of the length of the Ohio River. Table V presents the tonnages of chemicals shipped on the Kanawha River in 1988. It may be noted that of 970,768 tons of chemicals received and shipped on the Kanawha that year, 857,929 tons, or 88.4 percent, moved inbound and outbound via the confluence with the Mississippi River, mainly from and to the Gulf Coast. On the Ohio, the inbound movements had to traverse the antiquated works in the Olmsted Reach, the congested McAlpine works, and the outmoded Gallipolis structure before arriving at the Winfield bottleneck, with Charleston almost within sight. Outbound traffic had to surmount these same hurdles in reverse order. For the West Virginia chemicals industry, the integral system-wide character of the Ohio River improvement program is evident.

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Impact on Chemicals

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The Pittsburgh Engineer District; Ohio, Monongahela, and Allegheny Rivers This district encompasses the Pittsburgh-Beaver Valley Metropolitan Area plus the reach of the Ohio River downstream from the Pennsylvania border to the upper boundary of the Huntington Engineer District, 127 miles below Pittsburgh.

The interests of the chemicals industry in this district are directly involved in the Ohio River modernization program over the entire 981-mile distance to the Mississippi. In Table V it may be noted that, of the total 2.29 million tons of chemicals received and shipped in the Pittsburgh District in 1988, 1.85 million, or 80.7 percent, moved via the Ohio-Mississippi routing. Most of this tonnage was inbound from the Gulf Coast. To reach the Pittsburgh District, these chemicals had to traverse the barriers of the Olmsted Reach, McAlpine, Gallipolis, and the three constraining structures near Pittsburgh (Montgomery Island, Dashields, and Emsworth). Most of the outbound shipments encountered the same hurdles in reverse order.

In addition to the immediate Pittsburgh area, the Pittsburgh Engineer District includes eight riverside counties in Ohio and West Virginia, with the metropolitan areas of Canton, OH, Steubenville-Weirton, OH & WV, and Wheeling, WV. A total of 41 chemical plants are reported for these areas, but, to protect proprietary information, employment and operating data are not reported.

The Pittsburgh-Beaver Valley Metropolitan Area includes all five counties of southwestern Pennsylvania and, excluding Greene County, extends to the Ohio and West Virginia borders. In this area, there are 103 chemical plants. In 1988, the Port of Pittsburgh received and shipped 1.28 million tons of chemicals, or an average of 12,432 tons per plant. These plants employed 5,400 workers, and the waterborne tonnage averaged 237 tons per worker. As previously noted, a limited portion of these tonnages were not shipped or received by chemical plants.

The Pittsburgh chemicals industry is an important source of numerous essential materials and supplies for other industries in the area. The proximity means lower transportation costs and more

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Table IV: Waterborne Chemcials Received and Shipped On The Kanawha River-Virginia (1988)

	Tons Inbound	Outbound	Totals
Via Locks Nos. 52 & 53, Ohio River (Olmsted Reach), McAlpine, Gallipolis, & Winfield (From and to Gulf and Mississippi Valley)	739,949	126,980	857,929
Via Kentucky Lock, McAlpine, Gallipolis & Winfield (From Tennessee River)	4,800	----	4,800
Via McAlpine, Gallipolis & Winfield	24,665	6,751	31,416
Via Gallipolis & Winfield	39,461	----	39,461
Via EDM & Winfield	19,588	940	20,528
Total Constrained Tonnage	819,463	134,671	954,134
Unconstrained Tonnage			16,634
Total tons of waterborne chemicals received & shipped			970,768

Table V: Waterborne Chemicals Received and Shipped In The Pittsburgh Engineer District (Ohio, Monongahela, and Allegheny Rivers), 1988

	Tons Inbound	Outbound	Totals
Via Olmsted, McAlpine, Gallipolis & EDM (From & to Gulf Coast & Miss. Valley)	1,615,064	231,281	1,846,345
Via Kentucky Lock, McAlpine, Gallipolis & EDM (From Tennessee River)	1,200	25,392	24,592
Via McAlpine, Gallipolis, & EDM (From Lower & Central Ohio Valley)	4,975	57,761	62,736
Via Gallipolis & EDM	153,855	2,800	156,655
Via Windfield & EDM (From Kanawha River)	940	19,588	20,528
Total Constrained Tonnage	1,776,034	334,822	2,110,856
Unconstrained Tonnage			182,529
Total Tons of Waterborne Chemicals Received & Shipped			2,293,385

Impact on Chemicals

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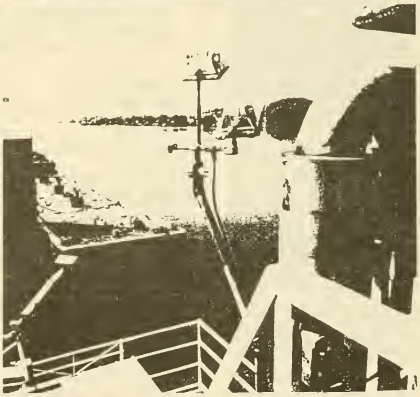
prompt delivery as well as first-hand communication as to specifications and terms.

Finally, it should be pointed out that waterway transportation of chemicals is of benefit to the coal and steel industries of the region. The production of coke generates a substantial volume of by-product chemicals, derivatives of coal tar and light oils, including benzene, toluene and xylene. Of all chemical shipments from the Port of Pittsburgh in 1988, crude tar, oil, and gas products, along with benzene and toluene, comprised 87.8 percent of the total tonnage.

The Monongahela River. The lower Monongahela River lies within metropolitan Pittsburgh, and traffic within this reach is encumbered by the inadequate dimensions and deteriorated structures of old Locks and Dams 2, 3, and 4. In 1988, 21.2 percent of all the waterborne receipts and shipments of chemicals in the Port of Pittsburgh were to and from points on the Monongahela. The outbound shipment of crude tar, oil, and gas products, at 141,163 tons, was the largest of these.

For the chemicals industry, the prospective improvements on the Monongahela are integral with the mainstream program. The Monongahela movements are mostly originating and terminating portions of very long hauls. In 1988, 35.2 percent were carried to and from the Gulf Coast, and most of the remainder served distant points in the middle and lower Ohio Valley. The lower Monongahela thus takes its place with the programmed modernization works downstream between Pittsburgh and the Mississippi as critical to the long-haul movements characteristic of the chemicals traffic.

Allegheny Technical Company



top: Chemical plant on the banks of the Ohio River system have access to [illegible] water transportation.

Chemicals for Consumers

The finished product character of much of the Ohio Valley chemicals industry is indicated by the 1987 U.S. Census of Manufacturers. The Census reports product information only for metropolitan areas, of which there are sixteen on the banks of the Ohio River System. Data for a few of the smaller ones have been withheld to avoid disclosure of proprietary information, and approximate figures have been estimated for these.

In 1987, the sales per employee in the Ohio Valley chemical industry were $321,255. For this industry in the rest of the country, they were only $279,275. The partially processed character of materials received is also indicated. In the Ohio Valley the chemical industry's materials cost per employee was $162,737. It seems evident that the Ohio Valley sector of the chemical industry is closer to being a consumer goods producer than are chemicals operations in the rest of the country, both in materials received and in products shipped.

As a supplier of industrial chemicals, the Ohio Valley industry provides an abundance of materials at low cost to a variety of the region's industries. Oil refineries, steel mills, aluminum producers, glass and glassware manufacturers, fabricated rubber products, and textile mill products are among the Ohio Valley industries served. In the Ohio Valley there are 356 producers of plastics products alone.

Chemicals Industry Payrolls In addition to its role as a supplier of industrial materials, the chemicals industry generates direct income in Ohio Valley communities. Chemicals 1987 payrolls in selected metropolitan areas were as listed in Table VI.

Table VI: Chemicals Industry Payrolls in Selected Ohio Valley Metropolitan Areas (1987)

	Millions of Dollars
Charleston	$ 186
Cincinnati	412
Louisville	230
Parkersburg-Marietta	177
Pittsburgh	147
All Others	481
Total, Ohio Valley	$1,633

Source: U.S. Census of Manufacturers, 1987

These payrolls represent a relatively high standard of community life and culture. The industry abounds in university-trained scientists and in highly skilled personnel. In 1987, the average payroll per employee in all U.S. manufacturing was $25,039; in the U.S. chemicals industry $30,702; in the Ohio Valley chemicals industry, $32,791. The higher income implies a higher standard of living, a higher level of education, and a greater constructive involvement in community affairs.

Waterway Transportation as a Competitive Strength The magnitude of waterway transportation as a supportive element to these payrolls may be measured by the waterborne tonnage per employee. In 1987, the chemicals transported on the Ohio River System amounted to 252.2 tons per Ohio Valley chemicals industry employee. This figure should be perceived as merely indicative; a portion of the tonnage was neither shipped nor received by Ohio Valley chemicals establishments. But, the corresponding figure for the rest of the U.S. chemicals industry, subject to the same qualification, was only 46.5 tons. The competitive position of the Ohio Valley industry is thus significantly involved in the Ohio River modernization program.

Marvin J. Barloon was born December 11, 1906. He was Carlton Professor of Economics at Case Western Reserve University in Cleveland, Ohio, specializing in transportation by water. He appeared as an expert witness on numerous occasions before committees of the U.S. Congress. Professor Barloon played a major role in the cannelization of the Ohio River in the capacity of economic consultant to the Ohio Valley Improvement Association (OVIA), the National Waterways Conference, and state governments.

Professor Barloon died September 1, 1991. He is survived by his wife Bianca.

DINAMO

The Association for the Development of Inland Navigation in America's Ohio Valley.

Three Gateway Center
Pittsburgh, PA 15222
412 392-4550

Executive Director ..... R. Barry Palmer

President/ Treasurer..... Justin T. Horan

Communication Manager..... Susan Loedding

Limitations of Plant Location

Every [illegible] enjoys unimpeded access without transshipment to all sections of this extensive region.

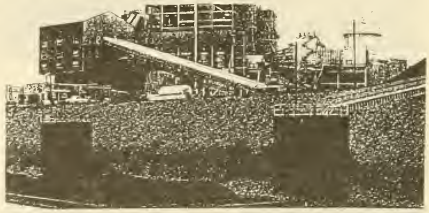
In addition, low sulfur western coal, mainly from Wyoming, enjoys good rail/waterway connections near the confluence of the Mississippi and Ohio Rivers for waterborne delivery in the Ohio Basin, supplementing the low sulfur coals of West Virginia and eastern Kentucky.

Abundant & Stable Water Supply

The designation of the river-based utilities as the National Power Production Center is enhanced by the navigation related abundance and stability of water supply. Power plants require lots of water, but not consumed in significant amounts. About 98 or 99 percent of all the water they withdraw from the rivers is returned gently discharged into the same stream and, with suitable [illegible] for temperature control, [illegible] available for re-use by [illegible] communities. The net water withdrawals many [illegible] are [illegible] plentiful [illegible] dependable.

[illegible] utilities on the Ohio [illegible] which have been in service since the early [illegible] supplemented by [illegible] to meet the need in [illegible] stable the flow of the Upper Ohio River near Pittsburgh varied between a high of 557,000 and a low of 1,300 cubic feet per second, a ratio of 428:1. In the lower river, near Paducah, Kentucky, this ratio was about 80:1. During extremely high water, disastrous floods swept through the streets of Pittsburgh and Cincinnati. During low water, men waded across the river via the semi-stagnant pools in the river bed. Water intakes, if low enough to be always below the surface in time of low water, would draw sand and other bottom sediments into the power plant, while exhausting the supply of cool water in the depleted river.

The navigation dams solve this problem. Their main function is to maintain a navigable channel depth of at least nine feet and most of the reaches of the navigable rivers permanently exceed this depth. In addition, the impounding, backed up by the dams, assure



sufficient volumes of water for the cooling function.

The navigation dams are supplemented by numerous main navigable upstream storage reservoirs, or man-made lakes, on the many smaller tributaries above the head of navigation. In the late 1980's there were 77 of these reservoirs throughout the basin. Among other purposes, most of the functions of these works include the complementary objectives of flood control and the augmentation of low flows in the downstream navigable reaches during dry seasons. During high water periods, these reservoirs, capturing and hold great quantities of precipitation and runoff, saving downstream cities and rural communities from serious flood damage. Conversely, in dry seasons, releases from the reservoirs augment the rate of flow in the downstream navigable reaches, enhancing the river's current in a manner conducive to improved usability for the local utilities, as well as for other industries and commercial and residential communities. The upstream reservoirs thus complement the function of the navigation dams by permitting maintenance of the nine foot channel without unacceptable stagnation of current. The Army Corps of Engineers reports that during the drought of 1989, such releases increased the flow of the Ohio River at Cincinnati by 40 percent.

Waterbased Electric Energy Within and Beyond the Ohio Basin

On this foundation, electric power has become a specialization of the region, like corn in Iowa or orange juice in Florida. In 1987, the counties on the banks of the Ohio River System in the eight states the System serves had a population of 4.1 percent of the U.S. total. This includes such metropolitan areas as Pittsburgh, Cincinnati, Louisville, and Nashville, in addition to a large number of smaller communities. With only 4.1 percent of the nation's population, waterside electric plants in these counties produced 11.1 percent of the nation's electric power.

Navigation on the Ohio River System [illegible] supplies coal to power plants situated outside the River. In 1987, some 12.5 million tons were waterborne all the way to plants on the Gulf Coast between New Orleans and Tampa, Florida. An additional 9.3 million tons were waterborne to plants on the Mississippi and Illinois Rivers, and large tonnages of this to Memphis and Chicago.

Cargo originated by barge on the System was transferred at barge to rail terminals for delivery to power plants in north and central Georgia, to plants in Maryland, and via rail and lake to eastern Canada. All of this coal had to work its way through antiquated and run-down lockage structures on the navigating streams.

Petroleum Import Equivalents

The efficient transportation of Ohio River coal bears on U.S. foreign policy and national security. As petroleum consumption continues to mount, we are moving again into an era when most of the country's petroleum will have to be imported, raising the spectre of a return to the disruptions of the OPEC period and reliance of the nation's economy on the politically volatile Middle East. The coastal region is especially vulnerable to reliance on imported petroleum fuels.

The Ohio River Basin coal shipped by water to generating plants on the banks of the Ohio River System in 1987 had a Btu content equivalent to 310.9 million barrels of petroleum fuels; that were waterborne to Gulf utilities, 46.8 million barrels; and that to power plants on the Mississippi and Illinois Rivers, about 34.9 million barrels. The three combined were equal to some 16.1 percent of the total U.S. importation of crude oil and petroleum products in 1987. The modernization of the navigation system carrying Ohio Basin coal to electric generating plants thus translates itself into a move toward energy independence with overtones to a strengthened foreign policy and national security.

Magnitudes of Steam Power and Hydro Power

Practically all of the electric energy generated in Tennessee is produced by public agencies, either the Army Corps of Engineers or the Tennessee Valley Authority. Most of this output is from steam plants, the TVA having grown far beyond its one-time main dedication to hydro power. Throughout the remainder of the Ohio River System, however, almost all of the electric energy, something over 75.0 percent of the System's total, is produced by investor-owned utilities.

The figures cited include hydro power produced on the navigable reaches of these rivers, only 4.6 percent of the System total, and mainly on the Tennessee and the Cumberland. Some additional hydro power is now being developed at several of the large navigation locks and dams on the main stream of the Ohio River.

Hydro power is a joint product of navigation. It is especially advantageous because of its low cost, its security as a domestic energy resource, and its environmental advantages. These are largely attributable to the navigation system. The multiple-purpose character of the dams on the Tennessee and the Cumberland include navigation and hydro power as joint benefits, the navigation function thereby establishing hydro power's economic feasibility. On the Ohio, the new hydro power works are a direct by-product of structures built mainly for navigation.

Percentages of Ohio River System Energy to State Totals

We have referred previously to the percentage of the System's electricity output to the national total. Its dominance in the supply in individual Ohio River Basin states is even more striking. The System's riverside counties in Ohio, for example, are home to only 15.6 percent of the state's population. But, in 1987, their waterside plants generated 68.7 percent of Ohio's electricity. Only 10.0 percent of Hoosiers live in counties bordering the Ohio River. But, these counties produced 35.5 percent of Indiana's electricity. In Alabama, the corresponding percentages are 18.0 for population (on the Tennessee River) and 25.0 for electric power.

West Virginia is preeminently a river state. Three navigable rivers either adjoin or lie within West Virginia, and 50.3 percent of the people live in counties. In 1987, these produced 64.5 percent of the state's electric energy. Tennessee, also a river state, is served by two navigable tributaries of the Ohio. The riverside Tennessee counties are home to 36.9 percent of the state's population and, in 1987, produced 71.4 percent of the state's electricity (this does not include Memphis on the Mississippi River).

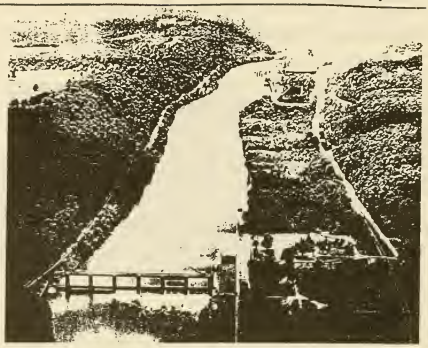
STATE	% OF POPULATION IN RIVERSIDE COUNTIES	% OF ELECTRICITY GENERATED BY WATERSIDE PLANTS
OH	15.6	68.7
IN	10	35.5
AL	18	25
WV	50.3	64.5
TN	36.9	71.4

Service Areas Outside of the Ohio Valley

The power plants, both thermal and hydro, on the Ohio River System serve widespread inland populations and industries, many located far from the rivers. For example, in Ohio, such non-river cities as Columbus, Dayton and Canton rely on the distant riverside stations for large portions of their energy supply. One large utility reports that, in a recent year, over 75.0 percent of the capacity of major riverside stations was utilized to serve remote-load areas via transmission lines ranging from 138 to 765 kilovolts. At times, generating stations on the System's banks have provided backup power via long-distance, high-voltage inter-connections, to avert outages in cities as remote as New York, Detroit and Roanoke.

High Utilization of Capacity

The power plants on the Ohio River System are also remarkable for their high rate of capacity utilization. Consumer advocates have frequently complained that utility rates include too much cost recovery on unused plants. Whatever the merits of such complaint in particular cases, it has no validity with respect to the Ohio Valley plants. In 1987, the power plants on the banks of the Ohio River System generated 4,684 kilowatt-hours per kilowatt of capacity. The 1per-kilowatt output of all other plants in the U.S. was only 3,480 kilowatt-hours and of the non-riverside plants in the eight states directly served by the Ohio River System, only 3,396. The distinctively high rate of utilization by the riverside plants presumably reflects their base-load function as low-cost facilities combined with superior husbandry of power supply by energy-intensive industries. The savings to the consumer of low-cost fuel at the plant are thus enhanced by the minimization of excess capacity without sacrifice of reliability.



Ohio Basin Energy-Intensive Industries

The [illegible] abundance of electricity in the Ohio Valley underlies much of the region's industrial strength, especially the industries which are energy-intensive. Aluminum smelting, an electrolytic process, is especially notable. Major concentrations of chemical plants, also energy-intensive, are located in the eastern Ohio Basin and the Tennessee Valley. According to the American Iron and Steel Institute, the steel produced by electric furnaces in the U.S. increased from 24.9 percent of the total in 1979 to 36.9 percent in 1988, a change associated with the increasing strength of the domestic industry in international competition.

The emerging industrial renaissance of the Northeast Quadrant of the United States includes an increasing element of newer high-technology, energy-intensive industries utilizing, for example, robotics in the motor vehicle, machinery, and appliance industries. Advanced food processing industries and computer technology are additional illustrations. American farming has become an energy-intensive industry, relying on an abundance of electric energy for powered machinery as well as flood-lighting of outdoor work areas and of the interior of large structures. By means of these utilizations, the electric power of the Ohio Valley supports an extensive complex of basic industry, enhancing the strength of the national economy in international competition, an asset of nationwide benefit. The efficient carriage of coal on the Ohio River System is a central feature of this role.

Benefits to Railroads

The region's railroads also benefit considerably from the rail-water traffic. Most of the waterborne coal on the System originates or terminates by rail. For example, the largest coal shipping port on the Ohio River System is Huntington, West Virginia. Major coal-producing counties tributary to Huntington (Mingo, Boone, and Logan) are up the Big Sandy Valley, 75 or more rail miles from Huntington. Ohio Basin low sulfur coal has been carried by barge on the Ohio River System to the Duquesne Wharf in Pittsburgh for transfer by Conrail and overland carriage to Maryland plants of the Baltimore Gas and Electric

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Benifits to Railroads

continued from page 7

Co. The Norfolk Southern Railway operates a barge-to-rail terminal on the Tennessee River at Pride, Alabama, for receipt of waterborne Ohio Basin coal and transfer for rail delivery to plants of the Georgia Power Co. in north and central Georgia. Coal is also carried downstream on the Monongahela River to Pittsburgh for further movement via rail and lake to Canadian generating stations. Examples could be multiplied.

The rail-water and water-rail linkages are a net benefit to the railroads. In the absence of low-cost waterway carriage, much of the alternative energy supply would take the form of fuel oil and natural gas, neither of which are carried in significant quantities by railroads. In 1987, only 2.6 percent of all the ton-miles of petroleum products moved in the United States were carried by railroads.

The Clean-Coal Program

Critics have called coal a "dirty fuel," particularly with respect to stack emissions containing sulfur dioxide and nitrogen oxides, raising the issue of acid rain injury to forests, wildlife, and human health. Whatever the validity of these concerns, they are rapidly being laid to rest by the cleansing of coal. Increased use of the large low-sulfur reserves of the Ohio Basin is well under way. While the total coal movement on the Ohio River System increased during the ten years ending in 1987 by 32.9 percent, the originations in the low-sulfur areas of the Kanawha and Big Sandy Valleys multiplied over three-fold, an increase of 270 percent.

New clean-coal technologies are making rapid progress. The American Electric Power Co. has taken the process of pressurized, fluidized bed combustion (PFBC) out of the laboratory and is bringing a 70,000-kilowatt demonstration plant into service at Brilliant, Ohio, scheduled to open in July, 1990. This project looks toward completion in 1995 of the first commercial-sized PFBC plant of 330,000-kilowatt capacity at the Philip Sporn plant on the Ohio River in West Virginia. The PFBC technology eliminates 90 percent of the sulfur dioxide and 50 percent of the nitrogen oxide, while raising the electricity generated per Btu of fuel by 10 percent.

Meanwhile, the U.S Department of Energy has instituted a program of public-private investment in the amount of $1.3 billion. Under this program, the Ohio Edison Company is constructing a $66.2 million demonstration project at the Niles Station. This project incorporates a technology identified as NOXSO, with the prospect upon successful development of eliminating 97 percent of the sulfur dioxide and 50 percent of the nitrogen oxide. The Dayton Power and Light Company is undertaking a similar project at Aberdeen, OH, on the Ohio River.

These processes along with many other multi-million dollar clean coal projects are now well beyond the laboratory stage, and the willingness of government and industry executives to commit such large sums to their incorporation into the system leaves little doubt as to their prospective success. It appears that by the end of the century, coal will have become a genuinely clean fuel.

The Consequences of Delay the Example of Locks No. 26

The run-down and antiquated navigation structures of the Ohio River System are still moving traffic, at least efficiently enough to sustain the low-cost movement of coal during most of the 1990's. But, some are getting to be serious bottlenecks and cannot last much longer. Lead times for replacement are long -- anywhere from five to ten years.

Something of the potentials of neglect is evident in recent experience on the Mississippi River. A construction start to replace old Locks and Dam No. 26, near Alton, IL, was scheduled for 1974. However, action was delayed for some years by litigation. With the replacement not yet completed in 1989, the breakdown of a worn-out lock gate on the old structure led to the formation of a queue of cargo-laden vessels 40-miles long, each stalled for six to seven days. An immobilized tow of barges, with its crew, represents a cost of $300 an hour or more, and the cost of a six-day wait for lock access would thus mount to over $40,000 per tow.

Such a crisis, or worse, a series of such crises on the Ohio River and its tributaries at the turn of the century would emasculate the rich energy logistics of the Ohio River System electric power industry, with somber implications for the U.S. energy supply and national security. There is no time to lose.

Marvin Barloon

Marvin J. Barloon is Carlton Professor Emeritus of Economics at Case Western Reserve University where he specializes in transportation by water. He has appeared as an expert witness on numerous occasions before committees of the U.S. Congress and Senate. For some 30 years he was economic consultant to the Ohio Valley Improvement Association, the National Waterways Conference, and state governments. His writings have frequently appeared in professional journals and in general magazines, including Harper's, the Reader's Digest, and the New York Times Magazine.

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DINAMO
ECONOMIC REPORT

The Association for the Development of Inland Navigation in America's Ohio Valley • Three Gateway Center • Pittsburgh, PA 15222

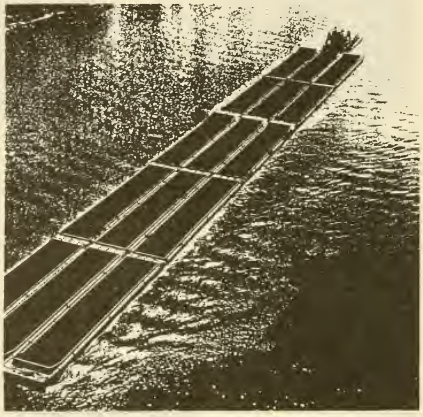
Relieving Waterways Bottlenecks: Importance to the Coal Industry of Ohio

After delays of many years, action is now being taken to relieve serious bottlenecks on the Ohio River navigation system. Other modes of transportation are up to date. Since World War II, major railroads serving Ohio have been modernized to computer-age standards. The New National Network for Trucks, 8,192 miles of it within the state, links Ohio's modern highways to all regions of the continent. But, the Ohio River System has been half forgotten. Modernization was well under way until the mid-1970's, when all progress came to a halt. Serious bottlenecks persist as lock-and-dam structures built in the days of the steam locomotive and the Model-T Ford continue to hamper Ohio's access to favorable markets and sources of supply.

Low Cost of River Transportation

Efficient transportation on the inland rivers is important to Ohio's economy. River transport specializes in bulk commodities moved in large tonnages—coal, gasoline, fuel oil, chemicals, building materials, iron and steel, farm crops, and the like. For this kind of freight, waterway cost is incomparably low. In 1986 (the latest year reported), the U.S. inland rivers carried almost 16 per cent of the nation's freight. But, they charged only 1.1 percent of the nation's freight bill.

Ohio shares in this saving by virtue of the state's 445-mile frontage on the Ohio River. This gives the state low-cost access to sources and markets throughout the system, including the cities of Pittsburgh, Charleston, Huntington, Louisville, Evansville, Nashville (on the Cumberland), and all Tennessee River ports. In addition, because of the Ohio's confluence with the Mississippi River at Cairo, Illinois, the river provides a through waterway routing to St. Louis, Chicago, and the Twin Cities on the north, to Kansas City and Tulsa on the west, and on the south to the entire lower Mississippi Valley and the Gulf Coast, from Florida to the Mexican border.



Over 19,700,000 tons of Ohio coal was shipped through obsolete lock and dam structures via the Ohio River in 1986. Its mine value was estimated to be $646,159,000.

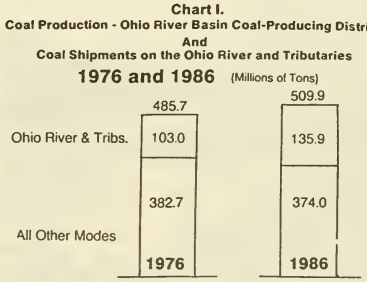
Ohio Coal's Dependence on Water Transportation

Apart from construction income, the longer-term benefits to the Ohio economy will be those consequent on heightened efficiency of the waterway system, accruing via the shipping and receiving industries to consumers, workers, and investors throughout the state. The largest volume commodity shipped to the Ohio River is coal, and the river is more important to Ohio's coal industry than the railroads. According to the U.S. Department of Energy, in 1986, Ohio shipped one and one-half times as much coal by river as by rail.

River Transportation as a Growth Factor in Coal Production

The National Coal Association projects the total demand for U.S. coal, domestic and export, for the year 2000 at 1,181 million tons. (this is the Association's "moderate" projection.) Whether or not Ohio's coal industry shares in this favorable outlook depends mainly on the navigation improvement program. From 1976 to 1986, the total production of the mining districts of the Ohio River Basin increased by 24.2 million tons. This was entirely an increase in shipments on the rivers. Indeed, the river shipments actually increased by more than the over-all rise in production (32.9 million tons), while shipments by other modes declined. If this relationship continues for the remainder of the century, the entire outlook for the region's coal industry rests on the programmed improvement of the Ohio River navigation system. The 1976-1986 relationships appear in Chart I.

Chart I.
Coal Production - Ohio River Basin Coal-Producing Districts
And
Coal Shipments on the Ohio River and Tributaries
1976 and 1986 (Millions of Tons)



[1] *The Ohio Basin coal producing districts are: #2 (western Pa.), #3 and #6 (northern W. Va.), #4 (Ohio), #7 (Va. & southeastern W. Va.), #8 (southern W. Va., eastern Ky., & eastern Tenn.), #9 (western Ky.), #10 (Ill.), #11 (Ind.), and #13 (southeastern Tenn., Ala., & Ga.).*

[2] *"Coal Shipments on the Ohio River and Tributaries" include all-river, rail-river, and truck-river.*

[3] *"All Other Modes" include all-rail, all-truck, and local consumption.*

Sources: U.S. Department of Energy
U.S. Department of the Army, Corps of Engineers

River Transport as a Restraint on Railroad Rates

Waterway competition holds railroad rates in check. During the 1980's, one of the major concerns voiced by coal executives has been the high rates imposed by railroads on shipments for which the rails have little significant competition. As an offset to this problem, in December, 1988, two major railroads, CSX Transportation and the Norfolk Southern Corporation, rescinded programmed rate increases on Appalachian coal carried to Atlantic ports for export. Waterway competition was a clear incentive for this rescission. Appalachian coal has an alternative outlet. Shippers can move the coal by barge down the Ohio and Mississippi Rivers for export via the New Orleans area. This influence bears on rail rates on other movements as well.

In the 1970's only about a million tons of coal were exported yearly via New Orleans. But, after 1980 the riverborne export movement rose irregularly to 9.4 million tons in 1986. There appears little doubt that the two railroads set their Atlantic coast export rates with an eye on the waterway alternative. Shippers by rail thus have a substantial stake in the modernized river system.

Because of its low cost, waterway transport carries off the regional surplus to distant coal markets beyond reach by rail or truck, keeping coal competitive in these markets while sustaining values at the mine. In 1986, the river system carried 22.7 million tons of Ohio Basin coal to the Gulf Coast, some for export, but most for coastal utilities.

The "Multiplier" Community Impact

The benefits of riverborne coal are also pervasive in the number and extent of the communities affected. There are 24 coal-producing counties in Ohio, all in the eastern, or Appalachian, area. The 1980 population of these 24 counties was just over 1.7 million. The importance of coal mine revenues in the Appalachian counties can hardly be overstated.

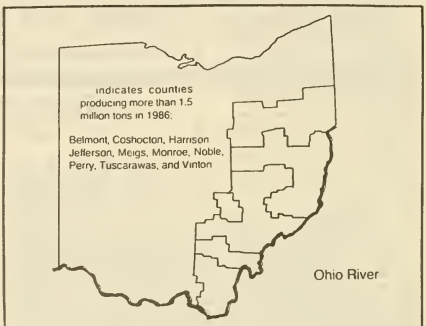
Far from being confined to the mining personnel, coal mine revenues exert an impact on all vari-

(continued on page 3)

The "Multiplier" Community Impact (continued from page 2)

eties of local enterprise and public services. The initial income, of course, flows to those who contribute, directly or indirectly, to the production and shipment of the coal: mine employees, proprietors, investors and mine suppliers. Most of this is respent locally, creating additional income for enterprises such as retail stores and professional services and revenues for public agencies (schools, safety forces, health services, street maintenance, etc.). The local impact of their respending (commonly called the "multiplier") is generally estimated as being about equivalent to the initial income, that is, a doubling of such income. The prosperity of the coal industry thus permeates every feature of community life in the mining communities.

Ohio coal shipped on the rivers in 1986 had a value at the mine of $646.2 million. Studies in Appalachian mining area indicate that about $409.7 million of this was local income. This includes payrolls, proprietor's income, supplies, maintenance, fuels, and other local purchases by the mining enterprises. Respending at a multiplier of two indicates total income from river-borne coal, direct and indirect, to the 1.7 million people of about $800 million.



The 24 coal-producing counties in Ohio produced 36.2 million tons of coal in 1986. Of this amount 19.7 million tons moved to market on the Ohio River and its navigable tributaries. In the ten Ohio counties producing over 1.5 million tons in 1986, the riverborne coal alone represented direct and indirect income of $5,675 per household.

TABLE I

TONNAGES AND VALUES OF OHIO COAL SHIPPED VIA RESPECTIVE LOCKAGE SITES ON THE OHIO RIVER AND ITS TRIBUTARIES 1986

Via Programmed Improvement Sites

Lockage Sites	TONS	Mine Values
Gallipolis Only	4,732,000	$155,210,000
Gallipolis, McAlpine, & Olmsted	125,00	4,100,000
Gallipolis, McAlpine, & Kentucky	2,638,000	86,526,000
Gallipolis & McAlpine	49,000	1,607,00
McAlpine Only	526,000	17,253,000
McAlpine & Olmsted	1,714,000	56,219,000
McAlpine & Kentucky	1,303,000	42,738,000
TOTALS VIA PROGRAMMED SITES	11,087,000	$363,653,000
Via Modern Locks and Open River	8,613,000	282,506,000
Total Riverborne Shipments of Ohio Coal	19,700,000	646,159,000

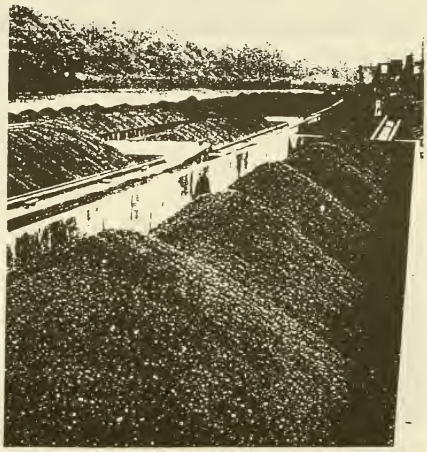
In individual counties, the local impact is much greater. In some localities coal mining is the dominant economic activity. Taking, for example, the ten Ohio counties producing over 1.5 million tons each in 1986, the riverborne coal alone represented direct and indirect income of over $5,675 per household.

Recognizing that the industry's growth over the past ten years has been entirely a growth in marketing via rivers, it is clear that the consequence has been a sustained strength of wholesome community life and well-being in the principal coal-producing counties of Ohio and that their share in the projected growth of the coal industry into the Twenty-First Century is directly dependent on a modernized river navigation system

Coal Tonnages Via Respective Lockage Sites

Something of the bearing of the river modernization program on the Ohio coal industry is indicated in Table I representing tonnage [illegible] values of Ohio [illegible] sited respective sites programmed for improvement. Large as they are these figures understate the impact Waterway carriage has been growing since 1986. Furthermore, the figures do not show the substantial revenues to railroads and trucking firms of the large rail-river and truck-river movements. In 1986 in the mining districts of the Ohio Basin, 37.0 percent of the river-borne coal reached the barge-loading terminals by rail and 37.4 percent by truck.

With the passage of time, the need for updating the Ohio River navigation system to modern standards becomes progressively more urgent. These present deteriorated works are subject to shut-downs for repairs with increasing frequency and duration, obstructing traffic, raising costs, and disrupting delivery and production schedules in the shipping and receiving industries. The affected industries include electric power, chemicals, iron and steel, refining and distribution of gasoline and fuel oil, and agriculture. Coal, as the largest waterway user, is the most concerned. Replacement projects require from five to ten years for completion, and every year heightens the urgency for relief. Expeditious progress is essential.



The age and obsolence of the Ohio River Navigation System facilities affects the delivery and production schedules in the shipping and receiving industries, particularly coal

Marvin Barloon

Marvin J. Barloon is Carlton Professor Emeritus of Economics at Case Western Reserve University where he specializes in transportation by water. He has appeared as an expert witness on numerous occasions before committees of the U.S. Congress and Senate. For some 30 years he was economic consultant to the Ohio Valley Improvement Association, the National Waterways Conference and state governments. His writings have frequently appeared in professional journals and in general magazines, including *Harper's*, the *Reader's Digest*, and the *New York Times Magazine*.

Barloon's reports on the coal industry of Kentucky and West Virginia and on the distribution of petroleum products via the Ohio River System appeared in the August and October, 1989 issues of the DINAMO ECONOMIC REPORT.

DINAMO ECONOMIC REPORT

October 1989

The Association for the Development of Inland Navigation in America's Ohio Valley • Three Gateway Center • Pittsburgh, PA 15222

The Modernization Of The Ohio River Navigation System And The Distribution Of Petroleum Products

Petroleum barges and tow moving along the Ohio River.

The Ohio and its tributaries constitute a major distribution network for the U.S. petroleum industry and provide an abundance of low cost petroleum fuels over much of northern Alabama, Tennessee, Kentucky, Illinois, Indiana, Ohio, West Virginia, and western Pennsylvania In 1986, the Ohio River System carried about 107.8 million barrels of petroleum products with a wholesale value of about $4 0 billion As a measure of magnitude, these petroleum products (listed in Table I) were equivalent to about a week's demand nationwide The gasoline, alone, was equivalent to about 2 5 times the total gasoline consumption of the State of West Virginia.

Because of its unmatched low cost in moving basic fuels such as coal and petroleum products, the improvement of the system is basic to industrial and commercial activity throughout the Ohio Valley States

A comprehensive program for the modernization of the Ohio River navigation system was initiated in 1986. Five modern lock and dam facilities have been authorized by the Congress for replacement, including the new Gallipolis locks, Ohio River OH/WV, Grays Landing and Point Marion, Monongahela River, PA/WV; Winfield Lock, Kanawha River, WV; and the Olmsted Locks and Dam, Ohio River, IL/KY.

Six additional projects have been identified for improvement: McAlpine Locks and Dam, Ohio River, IN/KY; Monongahela River Locks and Dams 2, 3 & 4, PA; Marmet Locks and Dam, Kanawha River, WV; and Kentucky Lock, Tennessee River, KY.

This report was prepared by Marvin J Barloon, Carlton Professor of Economics (Emeritus), Case-Western Reserve University, in order to 1) focus on the distribution of petroleum products on the Ohio River Navigation System and its importance to the people in the Ohio Valley states, and to 2) advance the modernization of old, deteriorating, and obsolete locks and dams in the region.

The Barging Linkage with Pipelines and Trucking

The barging of petroleum products complements pipeline distribution, providing flexibility for seasonal changes in demand for such products as gasoline and fuel oil and serving communities too small for pipeline receipt. Barging charges for any given distance are roughly comparable to pipeline costs, but considerably less for smaller and irregular movements. Refineries several hundred miles from the rivers (including some in the Great Lakes area) move petroleum products by pipeline to terminals on the Ohio River and its tributaries for distribution by barge on the river system. At barging terminals, tank trucks carry these products to inland communities

River Reaches Reliant On New Navigation Works

The Lower Ohio Basin and the Olmsted and McAlpine Projects

The Louisville District of the Army Corps of Engineers encompasses southwestern Ohio, western Kentucky, and substantial portions of Indiana and Illinois. In 1986, this region received via the rivers from Gulf Coast, Mississippi Valley, and Chicago area refineries 349.5 million gallons of gasoline, 4.3 million barrels of fuel oil, and 3.4 million barrels of asphalt and tar, in addition to large quantities of lubricating oils, kerosene, jet fuel and other products. All of these products had to enter the Ohio River at the mouth through the Olmsted gateway

The Olmsted gateway is now served by two antiquated lock-and-dam structures, completed in 1928 and 1929 and supplemented by more recent stopgap temporary locks whose design service life has already expired. It is becoming increasingly difficult to maintain these works because of the scarcity of their obsolete components. The Olmsted reach is one of the most densely traveled commercial waterway sections in the world. In 1987, it transited over twice as much cargo tonnage as the entire St. Lawrence Seaway, U.S. and Canadian combined.

The riverborne receipts of petroleum products via Olmsted constitute a substantial portion of the total supply of the multi-state Louisville District, not only for motorists and truckers, but for farm operations as well. While the inbound gasoline is distributed among portions of four states, as a measure of magnitude, the 349.5 million gallons transited in 1986 were sufficient to propel every automobile in the State of Kentucky a distance of 3,536 miles. Nearly all of the fuel oil transiting the reach is distillate, including large quantities of diesel fuel, mainly for trucks and farm tractors.

Asphalt and tar, partially employed in building maintenance, are of major importance to highway construction and resurfacing. In 1986, the 3.4 million barrels of these products received into the Louisville District via the Olmsted reach were equivalent to more than twice the total used on highways in the entire State of Indiana.

TABLE I

Petroleum Products Carried On The Ohio River System

1986

	Barrels (000)	Wholesale Value (000)
Gasoline	48,088	$1,857,159
Distillate Fuel Oil	23,156	863,256
Residual Fuel Oil	8,075	227,311
Jet Fuel	7,542	166,301
Kerosene	711	17,000
Lubricating Oils	6,013	505,092
Naphtha	1,579	122,688
Asphalt & Tar	12,547	246,674
Totals	107,771	$4,005,481

Sources: U.S. Dept. of the Army, Corps of Engineers. Prices: The Journal of Commerce, New York, and industry sources.

The Louisville District also received large quantities of petroleum products from easterly sources upstream on the Ohio River, particularly from the Huntington, West Virginia District and the Big Sandy River on the border of eastern Kentucky and West Virginia. A portion of this movement transits the McAlpine Locks at Louisville.

While not as antiquated as the Olmsted works, the main 1,200 foot McAlpine Lock is supplemented by an obsolete 600-foot auxiliary of inadequate depth and excessive turbulence, opened in 1921, and sited under a movable railroad bridge. The McAlpine works are on the verge of being swamped by rapidly growing traffic, tonnage having risen from 33.9 million in 1970 to 54.0 million in 1987.

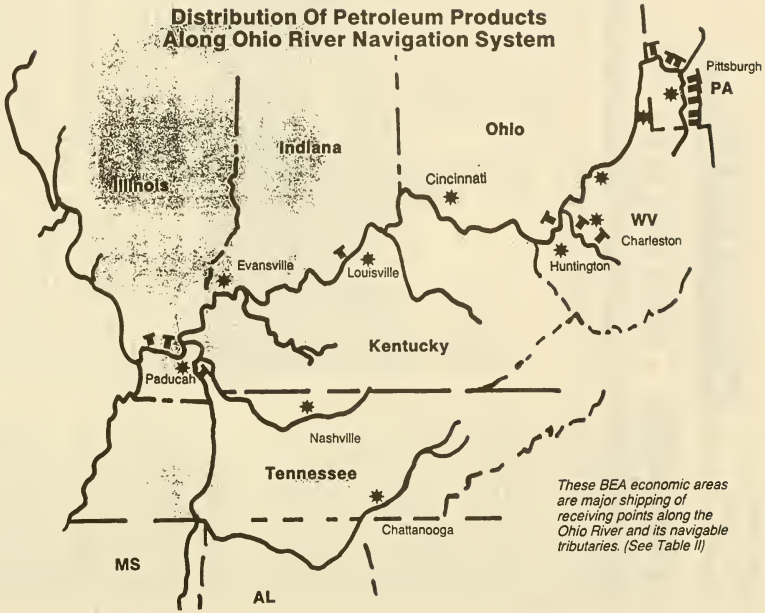
The magnitude of affected petroleum products is indicated by the 1986 receipts from upstream into the Louisville District of over 602.0 million gallons of gasoline, equivalent to about 32.9 percent of the total gasoline consumption of the State of Kentucky, in addition to 6.2 million barrels of fuel oil--mostly distillate and including large quantities of diesel fuel for trucks and farm tractors. In addition, over 320,000 tons of downbound asphalt, tar, and pitches enhanced the supply for highways and building maintenance. An unreported but substantial portion of these products transited the McAlpine bottleneck on their way to destinations in western Kentucky, Ohio, Indiana, and Illinois.

The Tennessee Valley and the Olmsted and Kentucky Lock Projects

Large quantities of petroleum products are barged into the Tennessee Valley from Mississippi and the Ohio River origins. They are consigned principally to central Tennessee and northern Alabama, although substan-

continued on page 5E

Distribution Of Petroleum Products Along Ohio River Navigation System



These BEA economic areas are major shipping of receiving points along the Ohio River and its navigable tributaries. (See Table II)

Public Interest Values In The Barging Of Petroleum Products

Enhancement of Competition

In terms of providing a critical linkage in the multi-modal structure of distribution, an efficient, modernized navigation system is very much in the public interest. The system not only saves costs, but by enhancing competition, it assures that these savings will be passed on to the consumers. Because of its relatively low capital requirements, river barging is widely utilized by independent marketers and distributors many of whom are too small for pipeline participation.

In addition, barging introduces into the regional market large tonnages of products from distant sources. As noted in Table I, gasoline and fuel oil constitute most riverborne tonnage of petroleum products. Of all the gasoline and fuel oil delivered via the Ohio Valley rivers in 1986, 21.7 percent came all the way from the Gulf Coast via the Mississippi River, and another 12.1 percent from Mississippi River connections. The remainder originated at refineries and pipeline terminals on banks of the Ohio and its tributaries.

Service to Small Communities - The Appalachian Region

The benefit of river distribution to small communities is especially notable in its application to the Appalachian Region. In 1986, of all the gasoline and distillate fuel oil received on the Ohio River System, 42.8 percent went to the Appalachian areas of West Virginia, eastern Kentucky, southeastern Ohio, and western Pennsylvania. The tourist industry and trucking for light manufacturing are important elements in the improving Appalachian economy, and the availability of seasonally adaptable deliveries at low costs of corresponding value.

Bearing on the U.S. Balance of International Payments

By providing low-cost access to widely dispersed markets, the river system strengthens the domestic refining industry as an alternative to product imports. Even with respect to that portion of the products refined from imported crude, the dollar value of the products is considerably higher than that of the crude, representing a substantial saving as against the alternative of product imports. Product imports are a substantial component of supplies originating on the Atlantic Coast, and in the upper Ohio Basin these products are in direct competition with those received by barge from Mississippi and Ohio Valley refineries. The 107.8 million barrels of products moved on the Ohio River System in 1986 were equivalent to 14.4 percent of total U.S. imports of petroleum products for that year.

A petroleum terminal located near Ashland, Kentucky

Table II

1986 Shipments & Receipts of Ohio Basin Petro-Fuels Traffic (Thousand Tons)

BEA* Name	Shipments	Receipts
Pittsburgh, PA	363.2	2,455.0
Chattenooga, TN	2.0	316.5
Nashville, TN	4.3	215.1
Paducah, KY	123.9	762.7
Louisville, Ky	95.0	2,584.8
Huntington, WV	7,136.2	871.8
Charleston, WV	0.0	1,001.2
Morgantown, WV	0.0	172.2
Parkersburg, WV	577.4	810.8
Wheeling, WV	157.3	465.7
Cincinnati, OH	601.4	1,729.4
Evansville, IN	145.5	1,326.9

** A "BEA" economic area (Bureau of Economic Analysis Economic Area) consists of a standard metropolitan statistical area (SMSA) or a similar area that serves as a center for economic activity, and the surrounding counties that are economically connected to that center.*

Source: Ohio River Division, U.S. Army Corps of Engineers

Tennessee Valley Reliant On New Navigation Projects Gallipolis Locks And Pittsburgh District

continued from page 2E

tial portions of the asphalt and other bituminous materials are carried as far as Chattanooga and Knoxville in eastern Tennessee. In 1986, about 9.1 million barrels of gasoline, fuel oil, and bituminous materials were so received. They had a wholesale value of about $300.0 million.

Some two-thirds of these receipts originated on the Mississippi River, much from the New Orleans area. This portion of the Tennessee Valley requirements, of course, has to transit the Olmsted reach of the Ohio. In addition, only 22 miles upstream on the Tennessee, it must move through the obsolete Kentucky Lock.

The capacity of the Kentucky Lock is inadequate for the mounting traffic demand. Transits via this lock have grown from 15.0 million tons in 1970 to 30.1 million in 1987 and are projected to reach 39.0 million by the year 2000. Because of its strategic location near the mouth, the Kentucky Lock is a constraint on the flow of commerce serving the entire 652-mile Tennessee Valley.

The Kentucky Lock is too small for modern vessel units and lacks an auxiliary for relief during closures for repair. The lock chamber is only 600 feet long, in contrast to the 1,000-foot length of the next upstream lock at Pickwick Landing. Lacking an auxiliary (also unlike Pickwick Landing), when the Kentucky Lock was closed for 104 days for rehabilitation work in 1986, traffic had to detour at high cost via the Barkley Canal and the Cumberland River.

The remaining one-third of the petroleum products moving into the Tennessee originates on the Ohio River, mainly from the Huntington, West Virginia, District, and thus has to transit, not only the Kentucky Lock, but prior to arrival at the Kentucky Lock, the McAlpine works at Louisville. This portion of the supply, too, is thus under a double handicap.

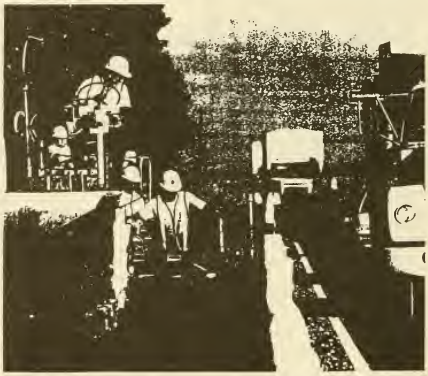
The Gallipolis Project and the Pittsburgh District

While dependence on the modernization program is serious in the Louisville District and the Tennessee Valley it is more critically so in the upper Ohio Basin. The upper Ohio Basin encompasses the Pittsburgh District of the Ohio River with its tributaries, the Monongahela and the Allegheny, and, in addition, the Kanawha Valley of central West Virginia. This large area embraces eastern Ohio, western Pennsylvania (including the Pittsburgh metropolitan area), and all of northern and central West Virginia (including the capital city of Charleston).

In 1986, about 91.7 percent of all the petroleum products received in this region by water were brought upstream via the outmoded locks and dam at Gallipolis, Ohio, on the Ohio River bordering the states of Ohio and West Virginia. The existing locks and dam at this site, completed in 1937, are the only remaining Ohio River navigation works lacking a 1,200-foot lock between the Pennsylvania border and the Mississippi River. With its main lock only 600 feet long, the existing facility is badly congested, run down, and hazardous to life and property.

In 1986, over 17.8 million barrels of gasoline, fuel oil, asphalt, and tar, in addition to substantial quantities of kerosene, jet fuel, lubricating oils, and other petroleum products, were moved upstream via the Gallipolis Locks into the Pittsburgh District of the Ohio River. (This does not include receipts in the Kanawha Valley.) The 17.8 million barrels had a whole sale value of about $612.0 million.

The riverborne receipts are a large portion of the region's total supply. About one-half of the tonnage was gasoline. As a measure of quantity, in 1986 the gasoline received into the Pittsburgh District was sufficient to propel every one of the household-owned passenger automobiles in the

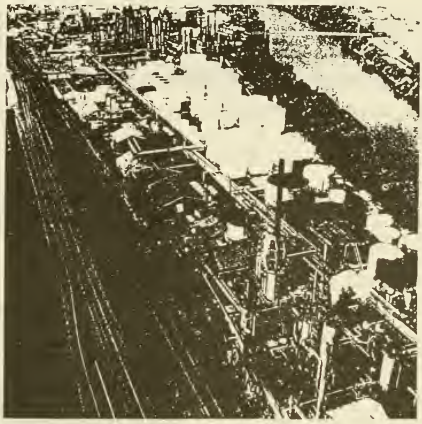


Waterborne asphalt products are used in road maintenance.

Pittsburgh District continued from page 5E
Winfield Lock And The Charleston, West Virginia Area

four-county Pittsburgh metropolitan area a distance of about 5,300 miles, 55 0 percent of the year s total mileage In addition, about 3 7 million barrels of distillate fuel oil were received in the Pittsburgh District via Gallipolis Much of this was diesel fuel The district is distinctive in the large quantity of residual fuel oil received via the Ohio, of special value to the region s steel industry and electric utilities The district received 3 0 million barrels of residual in 1986 with an estimated wholesale value of about $85 6 million River barging is especially important to the supply of residual fuel oil because this fuel is not ordinarily pipeline-adapted

The Pittsburgh District had a distinctively large stake in the Ohio River modernization program because of its location as the terminal area of the entire river system, Mississippi and Ohio combined In 1986, about one-third of all gasoline and other petroleum products riverborne into the district came all the way from the Gulf Coast and the Mississippi Valley and therefore had to traverse, not only the congestion at Gallipolis, but before arriving at the antiquated works at Olmsted and the congestion at McAlpine, a triple handicap to this large portion of the supply There appears little doubt that the costly delays and difficulties at these three old installations add significantly to the cost of industrial fuels and of motor fuels at filling stations throughout the upper Ohio Basin



Oil refineries are located with access to water, rail and highways

The Winfield Project and the Charleston, West Virginia, Area

The Kanawha River, flowing by the capital city of Charleston in central West Virginia and discharging into the Ohio a short distance upstream from Gallipolis, is of special concern because of the inadequate and outmoded locks at Winfield, a short distance above the mouth The twin locks at Winfield, only 360 feet long, are totally out of phase with even the inadequate 600-foot lock at Gallipolis, not to mention the 1,200-foot standard elsewhere on the Ohio, and can normally transit only one barge at a time Practically every normal vessel movement is stalled at Winfield for five or six hours laboriously locking through one barge at a time at a cost of some $300 or more an hour The effect is that of a partial severing of the Kanawha Valley and the Port of Charleston from the Mississippi and Ohio River Systems

In 1986, 8 2 million barrels of gasoline and distillate fuel oil, with wholesale value of about $314 8 million, were delivered into the Kanawha Valley via the Winfield Locks The gasoline alone was equivalent to 32 4 percent of the entire state s consumption that year

Most of these fuels (84 6 percent) originated in the Huntington District of Ohio and had to traverse the congested locks at both Gallipolis and Winfield The smaller amounts from more distant sources should be assessed in the light of the multiple barriers between those sources and West Virginia Only 14 4 percent came from the Gulf Coast and the lower Ohio Valley The portion originating on the Gulf had to contend in succession with the obsolete works at Olmsted, McAlpine, Gallipolis, and finally, Winfield There appears little doubt that the modernization of the navigation works at all these sites will open up a much more abundant supply of petroleum fuels for the Kanawha Valley not only, as at present from the Huntington District, but even more with the removal of multiple barriers, from Gulf Coast, Mississippi Valley and lower Ohio Valley origins West Virginia thus has a distinctively high stake in the entire modernization program of the Ohio River System

August 1989

DINAMO ECONOMIC REPORT

The Association for the Development of Inland Navigation in America's Ohio Valley • Three Gateway Center • Pittsburgh, PA 15222

Relieving Waterway Bottlenecks: The Importance to the Coal Industry of West Virginia and Kentucky

Thousands of dollars in income for each household in coal-producing West Virginia and Kentucky counties is generated by coal moving through outdated and obsolete Ohio River system locks and dams Waterway bottlenecks must be relieved now if the coal-based economies of West Virginia and Kentucky are to prosper, according to Marvin J Barloon, Carlton Professor of Economics, Case Western Reserve University At DINAMO's request, Professor Barloon prepared two reports, *Relieving Waterway Bottlenecks: Importance to the Coal Industry of West Virginia and Relieving Waterway Bottlenecks Importance to the Coal Industry of Kentucky* DINAMO submitted these reports to the House and Senate appropriations panels on Tuesday, April 4, 1989 as written testimony. The following is a summary of these two reports.

Water - Coal's Competitive Edge

The low cost of river transportation is beneficial to all coal mined in West Virginia and Kentucky, including that shipped by rail. In December 1988 two major railroads, CSX Transportation and the Norfolk Southern Corporation, rescinded programmed rate increases on Appalachian coal carried to Atlantic ports for export. The cancellation of the increases will save West Virginia coal an estimated $13 5 million in 1989 alone Waterways competition for export coal was a clear incentive for railroad restraint in these circumstances

Advantage to Export Coal

Export coal can move by barge down the Ohio and Mississippi Rivers for export in the New Orleans area In the 1970's, only about one million tons per year moved this way But after 1980 the waterborne export movement rose irregularly to 9 4 million tons in 1986 About 4 3 million tons of West Virginia coal took the waterway track to the Gulf in 1986, some for export and some for coastal utilities That same year Kentucky shipped 16 6 million tons via the Ohio River System to New Orleans and coastal markets Export coal shipped via water to New Orleans had a mine value of about $256 7 million

West Virginia Coal's Dependence on Water Transportation

In 1986, West Virginia shipped 35,000,000 tons of coal to market via the river system. This coal had a mine value of $1,100,900,000. This same year Kentucky shipped 37,946,000 tons of its coal on the Ohio River navigation system. This tonnage had a mine value of $978,333,000.

For West Virginia coal, the three routes to markets via the river include 1) northbound movements on the Monongahela River through Locks and Dams 7 & 8; 2) northbound movements on the Kanawha River through the Winfield Locks; and 3) coal movements originating on the Ohio River moving downbound through Gallipolis, McAlpine Locks and Locks and Dams 52 and 53, and the Kentucky Lock on the Tennessee River.

Locks and Dams 7 & 8

In 1986, Locks and Dams 7 and 8 transited 10.8 million tons of northbound coal, 9.2 million tons of it from northern West Virginia. Most of this coal was short haul, but some went to destinations in Tennessee and a portion even reached Louisiana. The average mine price in Marion and Monongalia Counties in 1986 was $32.27 per ton, and, at this price, the coal shipments via Locks 7 and 8 represented income to the area of about $297.8 million. Probably not less than some $200 million was local income. At only $200 million this income amounted to $3,800 per household in the two counties.

Major Coal-Producing Counties In West Virginia

The darkened areas on the map of West Virginia reflect the major coal-producing counties whose coal is shipped to market via the old, deteriorating and sometimes obsolete locks and dams on the Ohio River System.

The local impact of this respending (commonly called the "multiplier") is generally estimated as being equivalent to the initial income, or in this case about $400 million. This amount translates to $7,600 per household generated by coal shipped via Locks 7 & 8. It should be noted that the coal transiting Locks 7 & 8 was just short of 30 percent of total household income in the Fairmont and Morgantown areas.

Winfield Locks

In 1986 12.5 million tons of coal exited via the Winfield Locks. There are six coal-producing counties (Boone, Clay, Fayette, Kanawha, Nicholas and Raleigh) either on the Kanawha River or contiguous with the river field. This coal had a value at the mine of $389.1 million. Probably something in the neighborhood of $260 million of this was direct local income, and, allowing for the multiplier effect of local respending for goods and services, the income so generated in the six-county area probably amounted to some $3,250 per household.

Ohio River Locks

In 1986 13.1 million tons of waterborne West Virginia coal originated on the main stream of the Ohio River between the Pennsylvania border and the mouth of the Big Sandy. About one-half of this tonnage moved in relatively short hauls free from constraint by obsolete locks, but the remainder, 6.7 million tons, had to work its way through the Gallipolis Locks or the Olmsted reach, or both. Between West Virginia and Olmsted, of course, the coal had to transit the McAlpine Locks at Louisville

(continued on page 3)

Shipments of West Virginia Coal Via River 1986

Via	Tons	Mine Values (Millions)
Locks 7 & 8, Monongahela River	9,172,000	$297.8
Winfield Locks, Ohio River	12,467,000	389.1
Ohio River:		
Via Obsolete Locks	6,696,000	213.3
Other Ohio River	6,665,000	204.6
Totals	35,000,000	$1,100.9

Sources: U.S. Department of the Army, Corps of Engineers. Energy Information Administration, U.S. Department of Energy.

West Virginia Coal *(continued from page 2)*

In addition, substantial tonnages were shipped to Tennessee River destinations. At the mouth of the Tennessee, this tonnage was affected by the limited capacity of the Kentucky Lock, now under study for capacity enlargement.

As a measure of the importance of the waterborne coal to the producing communities, the mining origins are dispersed among a large number of counties. A suitable indicator, however, may be derived from the values of coal production in the four producing counties (Brooke, Marshall, Mason and Ohio) on the Ohio upstream from the mouth of the Kanawha and in three even larger producing counties in the hinterland of the Port of Huntington; that is, Boone, Logan and Mingo.

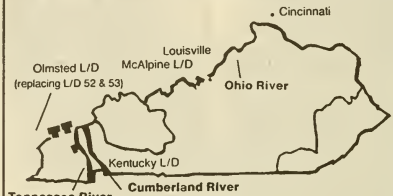
At the average 1986 mine price for these counties, the value of the coal originated on the main stream of the Ohio was $417.9 million. The portion of this revenue which constituted local income in the mining areas was probably not less than $280 million, and, again recognizing the doubling via less local respending, the estimated income per household generated by Ohio River shipments of coal from these counties approximated some $8,786. Setting aside, however, that portion of the river shipments which did not transit any of the obsolete and congested locks, the remaining 6.7 million tons which did transit them generated local income in the general magnitude of $4,500 per household in the affected counties.

Kentucky Coal's Dependence on Water Transportation

In 1986 Kentucky shipped 37,946,000 tons of its coal on the Ohio River navigation system. Nearly 2/3 of this coal moved through out-dated and obsolete lock and dam facilities. This tonnage had a mine value of $978,333,000. After deducting the estimated portion of the coal mining industry's revenues expended in other localities and factoring into account the "multiplier" impact of local re-spending, the income from the sale of riverborne coal in 1986 averaged approximately $5,705 for each household in the 21 Kentucky counties which produced more than 1.0 million tons each. These 21 counties produced 94.7 percent of all the coal mined in the state in 1986.

A more telling picture of the importance of coal shipped through old, obsolete lock and dam facilities can be gained by segmenting coal production in eastern and western Kentucky.

Major Coal-Producing Counties In Kentucky



The major coal-producing counties of Kentucky whose coal is shipped to market via the deteriorating and sometimes obsolete locks and dams on the Ohio River System are indicated by the darkened areas on the map.

Eastern Kentucky

Eastern Kentucky waterborne coal totalled 16,748,000 tons with a mine value of $441,812,000. The $441.8 million of mine revenue is principally income to residents of the mining areas. Some portion, of course, is paid to suppliers and investors in other localities. Very probably, however, not less than some $300 million is local income. The actual impact on the region's livelihood is about double this sum. The "multiplier" effect of local re-spending by mining personnel, local suppliers, and investors results in an aggregate community income in the neighborhood of $600 million. As a measure of magnitude, this amounts to about $4,509 for each household in the 13 eastern Kentucky counties which in 1986 produced over 1.0 million tons of coal each, attributable exclusively to coal shipped from the area by water.

Western Kentucky

In 1986 21,198,000 tons of Western Kentucky coal moved on the Ohio River and its tributaries. This coal had a mine value of $563,521,000. Adjusting mine income for payments to 110 suppliers and investors in other localities, and factoring in the multiplier effects of local respending, waterborne coal mined in western Kentucky resulted in income of $7,383 for each household in the eight western Kentucky counties (Butler, Daviess, Henderson, Hopkins, Muhlenberg, Ohio, Union and Webster) which in 1986 produced over 1.0 million tons of coal each.

Kentucky as a whole Benefits

A modernized river navigation system for getting Kentucky's coal to distant markets at a low cost is a substantial factor in the quality of life and public services throughout the state. These public services include schools, hos-

(continued on page 4)

Kentucky Coal

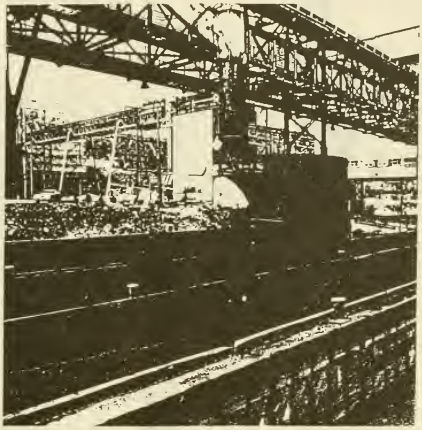
(continued from page 3)

pitals, street and road maintenance police and fire protection and a variety of other services essential to personal security and the quality of life. One estimate projected that Kentucky coal shipped on the river generated direct state and local tax revenue of at least $59.6 million and indirect tax revenues of about $108.9 million. This total amounts to $124.35 for each of the 1,355,000 households in the Commonwealth of Kentucky.

Kentucky produces more coal than any other state in the Union. Kentucky also ships more coal by river than any other state in the Union. Much that does not move by river moves by rail at water-competitive rates. The National Coal Association projects the demand for U.S. coal, domestic and export, for 1990 at 994 million tons and for 2000 at 1,181 million. These are the Association's moderate projections. By 1987 the industry had already come close to the 1990 figure at 914.7 million tons.

A modern, efficient navigation system is crucial to West Virginia and Kentucky's coal-based economies. Communities in both states depend on the reliable operation of lock and dam facilities for their livelihoods. To ensure that these states can remain competitive and partake in the opportunities of the future, modernization of critical lock and dam structures, such as Locks and Dams 7 & 8, Winfield Locks, Gallipolis and Olmsted Locks and Dams, must be a priority.

Mark Twain



Tonnages and Values of Kentucky Coal Shipped on the Ohio River and its Tributaries 1986

Via Outmoded Lockage Structures:

Lockage Structure	Tons	Mine Value
Gallipolis Only	3,087,000	$ 81,435,000
McAlpine Only	5,128,000	131,550,000
McAlpine & Olmsted	7,061,000	186,269,000
McAlpine & Kentucky	525,000	13,850,000
Olmsted Only	7,053,000	178,511,000
Kentucky Only	457,000	11,567,000
Totals	23,311,000	$603,182,000
Via Modernized Locks & Open River	14,635,000	375,151,000
Total State Riverborne Shipments	37,946,000	$978,333,000

SOURCES: U.S. Department of Energy, Energy Information Administration ***Coal Production,*** *1986*

U.S. Department of the Army, Corps of Engineers ***Waterborne Commerce of the United States,*** *1986, Part 5, Section 2. State by state origins and destinations of cargo tonnages via the McAlpine Locks were provided by the Waterborne Commerce Statistics Center, as tabulated by the Louisville District Navigation Planning Support Center.*

MERCER
Management Consulting

The Impact of the Barge Fuel Tax at 50 Cents Per Gallon

May 1993

REPRINTED September 1993

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Background and Summary

- The Administration has proposed a new $1 per gallon tax on fuel used by the barge industry. The new tax, which would be phased in between 1994 and 1997, would

  - Increase barge fuel taxes by 525 percent

  - Confiscate 25 percent of the industry's revenues, jeopardizing the 800 towing companies and their 180,000 employees who today serve America's basic industries including coal, grain, chemicals, steel, petroleum and building products

  - Be imposed in addition to the Administration's proposed Btu tax, which would add an additional 8 cents per gallon burden.

- Under the Administration's proposal, taxes on barge diesel fuel would total $1.28 per gallon by 1997. These taxes would triple the price of fuel for barge lines.

- The House Ways and Means Committee recently rejected the Administration's proposal, cutting the proposed fuel tax to 50 cents per gallon.

- Mercer Management Consulting, Inc. was asked by the waterway industry and water users to provide an economic analysis of the proposed tax as reported out of the House Ways and Means Committee. Mercer was assisted by Sparks Companies (which has expertise in grain merchandising) and National Economic Research Associates.

Mercer's analysis finds that the proposed tax at 50 cents per gallon:

- Is highly inefficient because half of all revenues collected will be offset by increases in government payments for farm crop price support and decreases in federal income tax receipts (see pages 4-10)

- Will cause substantial economic harm through

  - Losses of more than 40,000 jobs in the coal, aluminum and chemical industries (see pages 17-26)

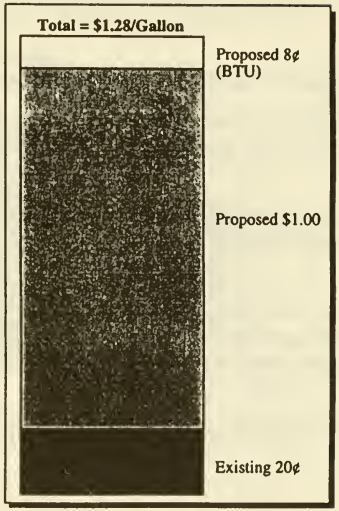
  - Substantial loss of coal and chemical exports, aggravating the U.S. balance of payments deficit by over $1 billion per year (see pages 16 and 26)

  - Reductions in farm income of $30 million annually

- Cripple the barge industry and related on-shore support industries (see pages 27-30).

Barge Fuel Taxes

- The $1.00 per gallon tax on diesel fuel used in barge transportation originally proposed by the Administration would be levied in addition to two other fuel taxes on barge operations:
  - An existing tax of 17¢ per gallon which will rise to 20¢ per gallon by 1995
  - A proposed BTU tax of 8¢ per gallon



The Impact on American Farmers

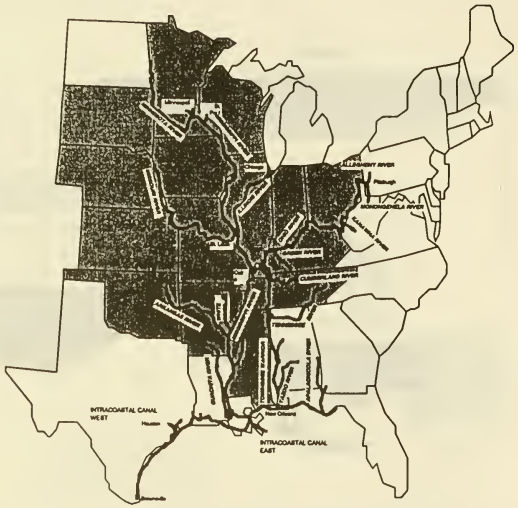
To calculate the impact of the 50 cents per gallon barge fuel tax on American farmers, Mercer Management and Sparks Companies:

- Estimated the portion of the proposed tax attributable to grains based on historic traffic flows by river segment, the operating characteristics of each river (i.e., tow sizes, fuel intensity, etc.), and the resulting consumption of diesel fuel subject to the tax
- For the period 1994-1997, forecasted river export volumes for the five major U.S. export grains: corn, soybeans, wheat, sorghum, and barley using an integrated model of the U.S. agricultural economy
- Translated the proposed tax into increased barge transportation costs and developed estimates by type of grain for reduced on-farm prices due to the tax
- Analyzed the price reductions to calculate the increase in support payments and decreases in farm income during 1994-1997

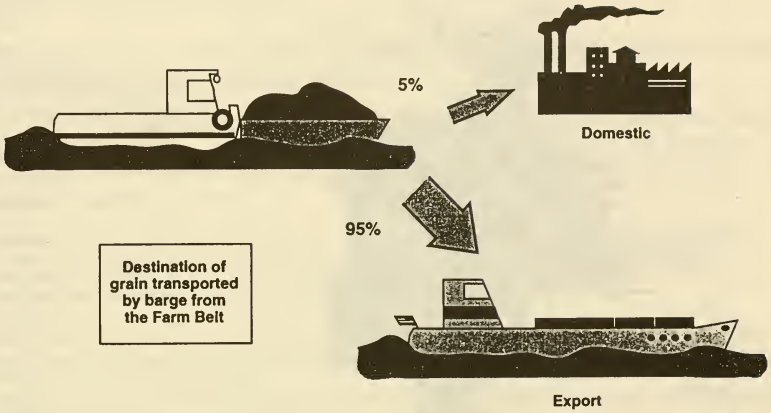
The Tax Hits the Farm Belt

- The proposed tax would affect 15 states that use the inland waterways to move grain to the Gulf for export:
  - Arkansas
  - Illinois
  - Indiana
  - Iowa
  - Kansas
  - Kentucky
  - Minnesota
  - Mississippi
  - Missouri
  - Nebraska
  - Ohio
  - Oklahoma
  - South Dakota
  - Tennessee
  - Wisconsin
- 5 major grains (as well as grain mill products) are exported from these states via the Gulf:
  - Barley
  - Corn
  - Sorghum
  - Soybeans
  - Wheat

Primary Grain Drawing Area for Barge Service



Virtually all grain transported by barge from the Farm Belt goes into highly competitive world export markets



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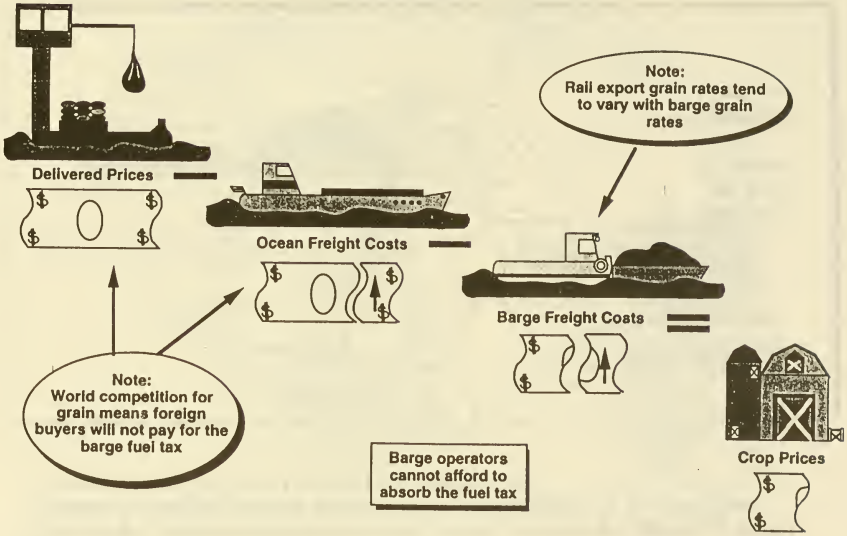
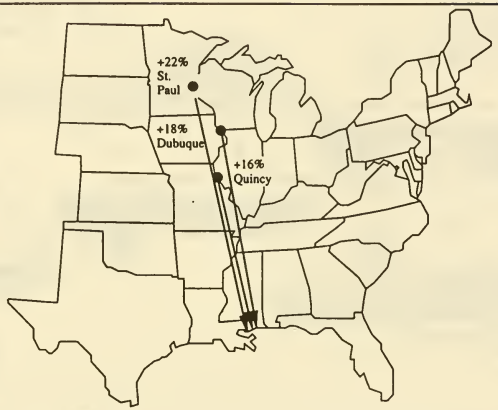
American farmers selling in these export markets receive world crop prices *less* transportation costs



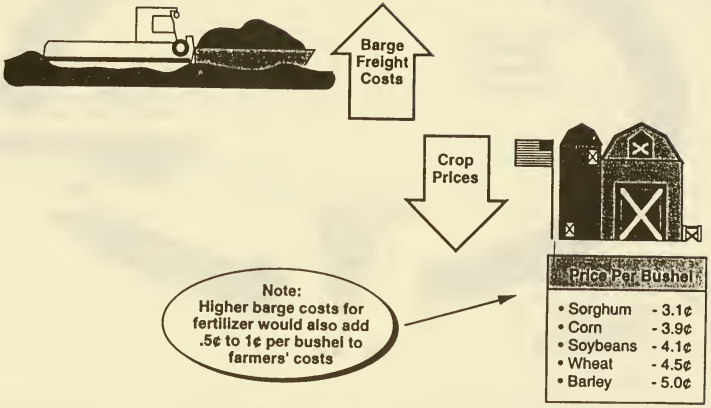
The proposed tax would increase barge transportation costs

- For example, measured against current barge rates, a 50 cent per gallon tax would increase the shipping cost for grain to the Gulf from Quincy, IL by 16%, from Dubuque, IA by 18%, and from St. Paul, MN by 22%



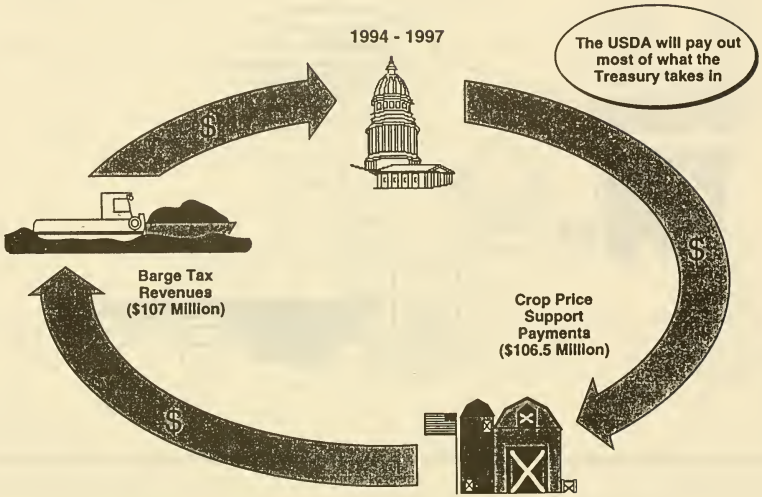
The fuel tax will be passed on to America's farmers

Increased barge freight costs would cut crop prices



The Revolving Door of Payments

- Ironically, the drop in crop prices will trigger increases in federal crop price support outlays that will offset all taxes raised from barge movement of grain



The Impact on American Exports and Jobs

To further assess the impact of the 50 cents per gallon barge fuel tax on American exports and jobs, Mercer examined three major commodities in addition to grain:

- Coal
- Aluminum
- Chemicals

The portion of the coal industry most adversely impacted by the barge tax is located in the Ohio River Valley

Coal that is low in sulfur and high in energy (btu) content originates at mines along the Ohio River and its tributaries

This coal is delivered by barge to four principal areas of consumption:

- Utility Region 1 (IN, KY, WV, OH)
- Utility Region 3 (IL, MO, WI)
- Utility Region 8 (GA, FL, AL, TN, MS)
- The Gulf export market

To estimate the effect of the proposed barge tax on Ohio Valley coal, Mercer Management and NERA:

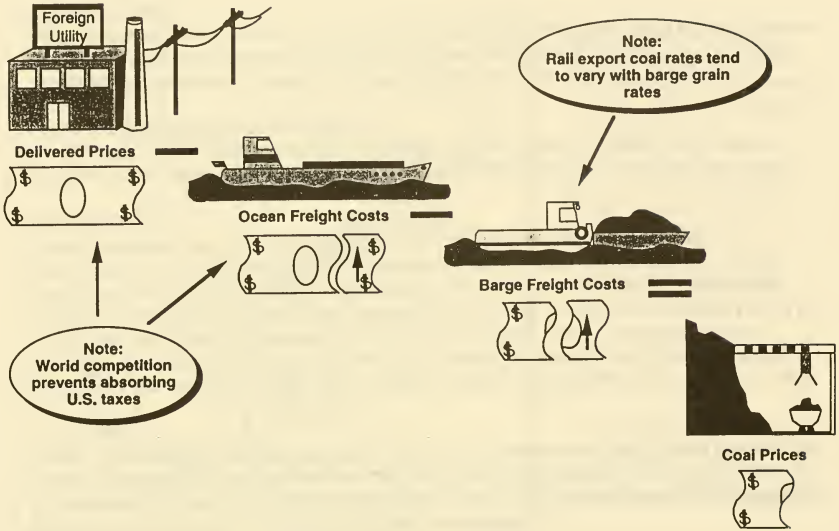
- Developed estimates of domestic coal production and consumption using the NERA coal and electric utility planning model, which has been refined over a period of 15 years. The model forecasts coal production for 6 regions and utility coal demand for 16 regions.

- Estimated the impacts of the tax on domestic utility consumption in two steps. First, the NERA model was used to project coal production and consumption under the Clean Air Act Amendments and the proposed Btu tax. This is the base case for analysis of the waterway fuel tax. Second, the 50 cent per gallon tax on fuel used in barge transportation was added. The differences in production and consumption between the two steps measure the impacts of the proposed barge tax, and allows direct comparison of the results in terms of regional coal production and employment.

- Computed the projected changes in the Ohio River Valley coal industry due to the tax in terms of direct coal industry losses as well as losses in related employment using recognized regional multipliers.

- Assessed the outlook for barge-delivered export coal based on the elasticity of demand for such coal and the expected increases in delivered prices for long-haul movements of coal from the Ohio Valley to the Gulf, and added such impacts to the domestic results.

As with grain, American coal producers exporting to foreign consumers receive world coal prices *less* transportation costs



The barge tax would increase barge freight costs and cut coal prices

In the eastern coal fields, the reduced price for coal will force some mines to close.

Foreign Consumers Won't Pay Added Costs

- U.S. coal exports are extremely sensitive to price increases. U.S. producers face intense competition from producers in other countries such as Australia and South Africa. The U.S. is typically the high cost supplier for both steam coal for utilities and metallurgical coal for steel production. The principal U.S. advantages in the world coal market are the high quality of its coal and the reliability of U.S. production vis-a-vis coal labor problems in competing countries.

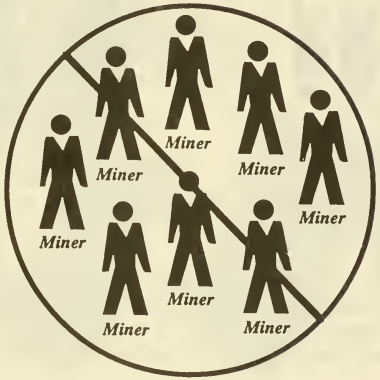
- Based on U.S. Department of Energy projections, NERA estimates the demand elasticity of U.S. steam coal exports to be as high as 7. This means that each 1% increase in the price of U.S. steam coal would result in a 7% decrease in demand by overseas purchasers.

- The barge tax at 50 cents per gallon would increase the barge rate on export coal from the Ohio Valley to the Gulf by as much as $2 per ton. Such an increase would significantly drive up the delivered price of U.S. coal -- now in the $40 range. Faced with such a major boost, foreign buyers - - already fickle toward the U.S. in their purchasing habits - - will turn to foreign coal sources.

  Result: A large portion of the barge coal export trade would be lost.

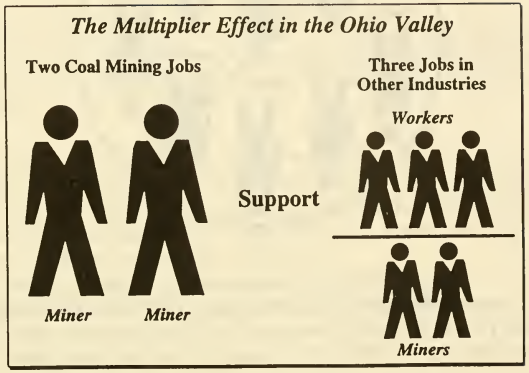
The Ohio Valley Would Lose Thousands of Jobs Due to the Waterway Tax

- Analysis shows that the loss of domestic and export coal business due to the proposed barge fuel tax could cost the mining industry in the Ohio Valley 13,000 jobs by the year 2000. This result at 50 cents per gallon is unchanged from the negative impact of the original $1.00/gallon tax.

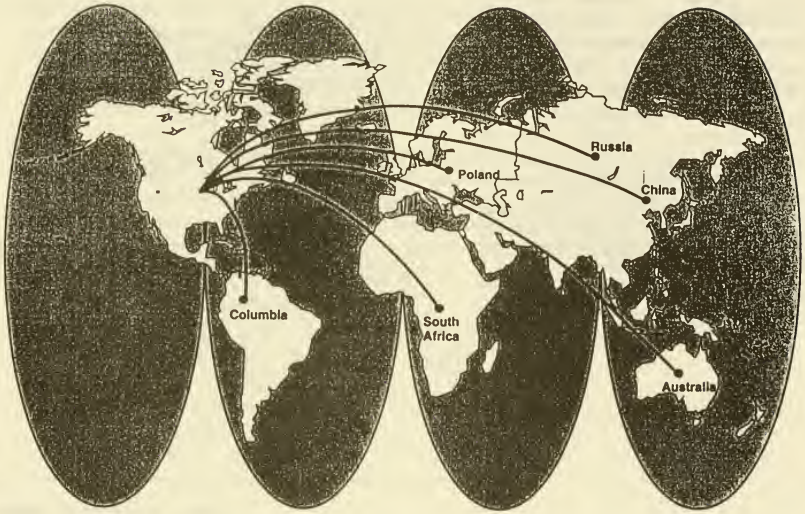


Additional Ohio Valley Jobs are Dependent on Threatened Coal Mining Jobs

- Economic studies show that for every two coal mining jobs in the Ohio Valley, there are three other jobs in related activities such as transportation, manufacturing and retailing. Loss of 13,000 coal mining jobs would render unemployed another 20,000 Ohio Valley workers.

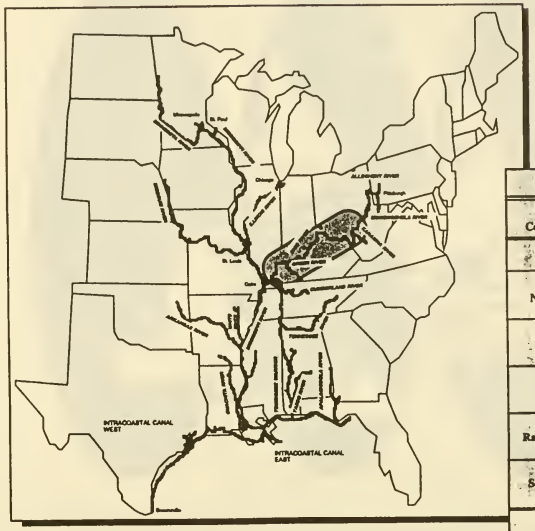


Most of These U.S. Coal Mining Jobs Will be Exported Overseas



Aluminum

As with coal, the impact of the proposed barge tax on the aluminum smelting industry centers on the Ohio Valley



Ohio Valley Aluminum Producers Served by Barge			
Company	Location	Production (Metric Tons)	Employment
Alcan	Sebree, KY	180,000	750
Noranda	New Madrid, MO	215,000	1,195
Alcoa	Warrick, IN	300,000	1,970
Ormet	Hannibal, OH	250,000	1,500
Ravenswood	Ravenswood, WV	165,000	870
Southwire	Hawesville, KY	185,000	700
TOTAL		1,295,000	6,985

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Barge Transport and Aluminum Production

- Barges supply these Ohio Valley plants with their requirements for alumina and anode carbon (coke), the two major bulk ingredients required for the manufacture of aluminum. These plants were specifically sited on waterways to access efficient barge service. Coal is also supplied by barge for generation of the electricity needed for the energy-intensive aluminum smelting process.

- The U.S. domestic smelting industry (including the Ohio Valley plants) is under intense pressure, caused by relatively high-priced electricity compared to foreign competition, and slow growth in demand for aluminum ingot. Since 1982, 10 smelters, representing 25% of U.S. production capacity, have closed. U.S. production of aluminum has declined from 5.4 million metric tons in 1982 to 4.2 million metric tons in 1992.

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Study Approach

To assess the impact of the proposed barge fuel tax on Ohio River Valley aluminum producers, Mercer

- Obtained information from the Aluminum Association regarding the location and production levels of smelters utilizing barge transportation for their inputs of alumina and/or petroleum coke, both of which are used to make aluminum.

- Interviewed three of the seven producers - Ormet at Hannibal, Ohio; Alcoa at Warrick, Indiana; and NSA Division of Southwire Corporation at Hawesville, Kentucky - to confirm levels of employment, contractual arrangements with barge carriers, costs of production, output, market conditions, and the impact of increased barge fuel prices on production costs.

- Based on the above information, estimates were made of the average increase in the cost of production which would be experienced by the seven producers as a result of the direct pass-through of increased fuel prices by the barge operators to the producers.

Aluminum is a Highly Competitive Worldwide Industry

- Aluminum is produced worldwide and its price is determined by the international commodity exchanges, primarily the London Metal Exchange (LME). Accordingly, individual smelters have no capacity to pass along increased production costs to their customers in the form of higher prices.

- Smelting aluminum from alumina is an energy intensive process. This puts U.S. (and Ohio Valley) producers at a competitive disadvantage vis-a-vis foreign producers with access to lower-cost energy.

- Worldwide prices for aluminum stand at approximately 52-54 cents per pound, a 40-year low when adjusted for inflation, and some 30% lower than the price prevailing just two years ago. A primary reason for this decline is the large quantity of product introduced into the export market by the CIS countries since the collapse of the Soviet Union. It is estimated that the cost of production for U.S. producers is approximately 60 cents per pound -- higher than the worldwide price.

The Effects of the Barge Tax on Aluminum

- Barge line contracts with U.S. smelters generally provide for a 100% pass-through of increased fuel costs to the smelter. If the proposed 50 cent barge tax is imposed, this will result in a 12-15% increase in the barge tariff for smelters, and cause production costs at the six Ohio River Valley smelters to increase by approximately $12.5 million per year.

- With worldwide aluminum ingot prices below production costs, continuing pressure on prices from CIS country selling practices, and the inability of smelters to pass along increased costs, the imposition of $12.5 million annually in additional production costs imposes a heavy burden on Ohio River Valley aluminum producers. Combined with the impact of the proposed Btu tax and the Clean Air Act on energy prices, it is a reasonable conclusion that the barge tax could force several of the Ohio River Valley smelters to close within the next several years.

Chemicals

The 50 cent tax on the fuel consumed by inland river towboats is likely to have significant and detrimental impacts on the U.S. chemicals industry and its ability to remain the world's leading exporter of chemicals and a positive contributor to the U.S. balance of trade.

- The restructuring of the chemicals industry in response to increased transportation costs will result in important changes to the competitive cost positions of some plants that were built along the inland rivers and waterways specifically to take advantage of low-cost, high capacity, and safe barge transportation.

- As individual chemical producers evaluate their manufacturing logistics, some plants will be closed. This will result in the loss of high-paying, quality jobs that contribute to the economic strength of the inland states. Instead, chemicals companies will rely on more integrated production in coastal regions (where domestic and import chemicals can be reached without reliance on the inland waterways) or on imports.

- A critical effect of the proposed fuel tax increase on the chemicals industry will be its implications for chemical traffic and its proximity to cities. As the cost of inland waterway transportation increases, the tonnage shipped on the waterways will decline and the tonnage shipped by rail will increase. For each barge that is diverted to rail, 10 to 40 railcars will be loaded. This will increase the volumes of chemicals moving through population centers, increasing risks when accidents occur.

The Chemicals Industry: Relationship to the Waterways

- The U.S. chemicals industry is a large and highly competitive foundation for U.S. manufacturing and exports.
  - In 1990, the U.S. chemicals industry employed 814,000 employees of whom 83,000 were fully dedicated to export production.
  - The per employee wages of the inorganic chemicals industry were $43,519 in 1989 - the highest of any "high technology" industry surveyed by the Commerce Department, 25 percent above the average U.S. high tech manufacturing wages, and nearly double the average private sector wages. This industry provides high paying, high technology employment with attractive benefits.
- The U.S. chemicals industry is a vital positive contributor to our balance of payments - contributing more than $20.5 billion in net exports in 1992 - and is the only industry to have maintained a trade surplus in every year from 1981 to the present.
  - U.S. chemicals exports totaled $48 billion and comprised more than 14 percent of total U.S. exports.
  - For every dollar of U.S. chemicals imports, the U.S. is able to export nearly $1.80.
- The barge tax threatens to drive U.S. producers to foreign feedstock chemicals, threatening thousands of U.S. jobs.

The Impact on the Barge Industry

Mercer analyzed the impact of the 50-cent barge fuel tax on the barge industry along two dimensions:

- Direct impacts on barge companies and employees
- Impacts on related "on-shore" industries, taking the State of Louisiana as an example.

Direct Consequences for the Barge Industry

- Preliminary Mercer estimates indicate that diversion of 60 million tons of freight -- or 12.7 percent of all barge tonnage (the upper end of the range calculated by the Corps of Engineers for a $1.00/gallon fuel tax) -- would permanently idle 3,600 barges, more than 100 towboats, and nearly 50 shiftboats. At 50 cents per gallon, the tax would still mothball 1,000 barges and more than 50 boats.

- This idled fleet has an investment value of more than $350 million.

- More than 1,000 towboat and shiftboat crew jobs, with an annual payroll of over $35 million, would be lost if the 50 cents per gallon barge fuel tax is imposed.

Indirect Consequences

- Mercer looked at Louisiana as a case study of the impact of the barge fuel tax on "on shore" jobs and economic activity. Because of its prominence as a transshipment site, Louisiana would be the state hardest hit by the proposed tax.

- By our preliminary estimate, some $434 million in direct value-added -- including primary employment in Louisiana -- is supported by marine activity related to the barge industry and the ships the barges directly serve. This activity creates thousands of jobs on tugboat, linehandling, midstreaming, and other activities related to the voyages of ocean-going ships and barges.

- Louisiana is exposed to the brunt of diversion because it is the key transhipment point for international cargo on the river, and because a high percentage of this cargo moves long distances by barge.

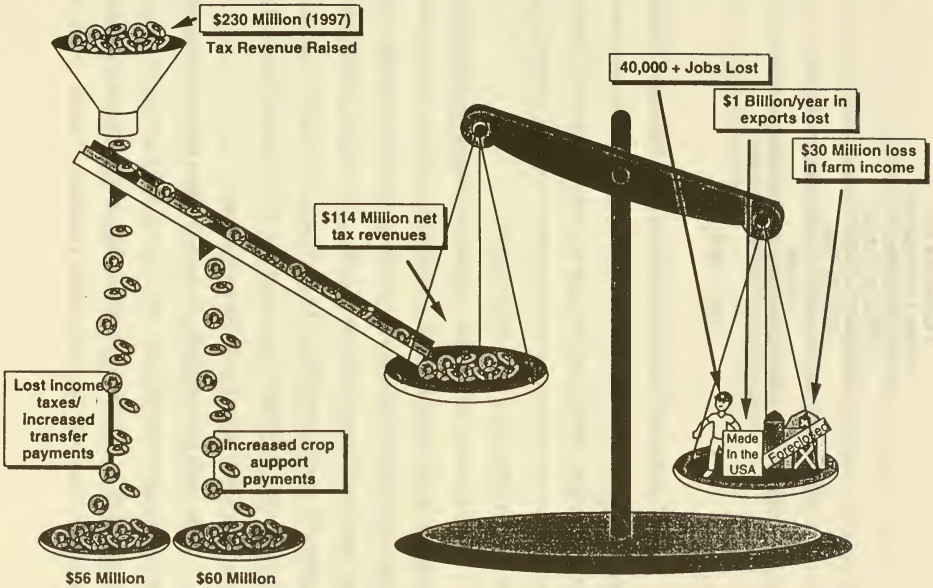
  - At a tax of 50 cents per gallon, Louisiana's barge-related marine industry could suffer a loss of $75 million annually in economic impact.

Conclusion

The Administration seeks to impose a major new tax on the inland waterway industry without any indication that the federal revenue and economic impacts of the tax have even been addressed. There has been no comprehensive analysis or quantification of the extent to which changes in other federal programs as a result of the barge tax could substantially offset revenues from the tax. Nor has there been any assessment of the effects of the tax on regional economic development in the vast areas surrounding the inland waterway system.

The proposal to heavily tax the entire inland waterway system has been put forward with far less analysis than the Corps of Engineers must routinely conduct for individual waterway construction projects.

The barge fuel tax isn't worth the cost



TESTIMONY OF
ROBERT PERCIASEPE
ASSISTANT ADMINISTRATOR
• OFFICE OF WATER
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
OF THE
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
U.S. HOUSE OF REPRESENTATIVES

May 4, 1994

Good morning Mr. Chairman and Members of the Committee. We are here today to discuss the Nation's water infrastructure, including our wastewater treatment and drinking water systems, our ports, and our navigable waterways. Government investment in this kind of infrastructure has fueled much of the economic prosperity that we have enjoyed and, even, come to expect.

We also invest in infrastructure, particularly environmental infrastructure, as an expression of our values and goals. In 1990 we, as a Nation, were committing roughly $115 billion or just over 2% of GNP to environmental protection: far more than most other western countries. Further, many public opinion polls have documented strong public support for increased environmental protection. For instance, a 1993 Times/Mirror poll reported that 77% of the public believes that the government should do more to control water pollution.

Today I want to address three very important topics related to our wastewater and drinking water infrastructure. First, I would like to address our current and planned levels of investment and need in both in both the drinking water and wastewater areas under the Administration's proposals. Second, I would like to

discuss the changing nature of the infrastructure partnership between local communities, the States, and the federal government. Finally, I would like to discuss the challenges that are before us and our opportunities to find solutions to these challenges in the reauthorizations of both the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA).

CURRENT AND PLANNED INVESTMENT IN INFRASTRUCTURE

First, let me turn to a discussion of our current and planned level of investment in the wastewater and drinking water areas and how those investments compare with our estimates of need.

Wastewater Investment

According to 1992 Census data, the current level of capital investment in wastewater infrastructure from all members of the partnership is roughly $10.0 billion annually. We were able to break this figure down using data from the 1990 Cost of Clean report. As you might expect -- the largest share, some 56%, came from our local partners. States provided approximately 7%. EPA provided another 26%, and other federal agencies -- including the Rural Development Administration, the Community Development Block Grant program, and others -- provided approximately 11%. It is also worth noting that federal participation in wastewater funding continues to be substantially higher than in most other environmental programs. For

all environmental programs on average, the local share averaged 76% in 1981 and was expected to increase to 87% by the year 2000.

Drinking Water Investments

In general, the information available on drinking water is not as well documented as it is on the wastewater side. We estimate that total capital investment in drinking water infrastructure, including proposed DW-SRF funds, would total approximately $6.5 billion per year. Of that, the State and local share is approximately 67% of the total. Other federal agencies, primarily Farmer's Home and the Community Development Block Grant program, provide approximately 27%. If the drinking water SRF program were authorized, EPA's share would be approximately 6%.

NEEDS

Wastewater Needs

EPA publishes a CWA Needs Survey every two years to document traditional wastewater needs as well non-traditional needs, such as combined sewer overflows (CSOs), stormwater, and nonpoint sources -- all of which are eligible for funding under the State Revolving Fund (SRF) system. Our latest survey estimates total needs at just over $137 billion, including needs of $31 billion for secondary treatment projects, $15 billion for advanced treatment, and $41 billion for CSOs.

The current and projected $10 billion annual investment in wastewater infrastructure from all members of the partnership will meet most, but not all, of the annual needs for construction. Because wastewater infrastructure is fundamentally a local responsibility, we believe that this difference will have to be filled primarily through local and State resources. Moreover, the Administration's proposal for additional capitalization of the CW-SRF program along with funds from other federal sources will substantially finance the additional costs associated with regulation under the CWA.

Drinking Water Needs

Again, our information on drinking water needs is very limited. EPA is currently involved in setting up a needs survey similar to the one conducted for wastewater. Our preliminary estimates show the annual investment of $6.5 billion will meet a large part, but not all, of the estimated amount of total drinking water infrastructure needs. The difference would need to be addressed primarily with local funds.

It is the Administration's position that the DW-SRF would only be available to support projects related to compliance with requirements under the SDWA. It would not be available for infrastructure improvements which are a local responsibility. However, other federal funding sources, such as the Rural Development Administration and the Community Development Block Grant program, are available for a wider variety of purposes. EPA will coordinate its efforts closely with these Agencies.

The Administration's drinking water SRF proposal was aimed at helping fund $1.4 billion in annual costs to comply with requirements under the SDWA. The bill reported by the Committee would expand eligibilities to allow funding of drinking water infrastructure needs traditionally funded at the local level aimed at water supply and not in response to federal requirements.

THE INFRASTRUCTURE PARTNERSHIP

Let me discuss the nature of our partnership with State and local governments and how that partnership is evolving and changing.

Since the late 1800's and early 1900's, our basic wastewater and drinking water systems have been constructed primarily by local initiative and at local expense. These and other capital investments are the foundations of local economic growth, public health and safety, and general quality of life.

Federal participation and involvement in infrastructure began in earnest after World War II, particularly in areas such as highways, housing, and wastewater. Today, infrastructure capital investment is a partnership effort between local communities, States, and the federal government (with increasing participation in some programs of private interests). Of course, the nature of this partnership varies greatly from program to program and should be seen to include funding as well as regulation which directly affects how funding will be utilized. This partnership has evolved and changed over the years, but has remained one of the cornerstones of our economy.

Wastewater and drinking water infrastructure remain essential services that must be provided at the local level and have not and should not be considered unfunded federal mandates. While these services remain essentially local responsibilities, there are appropriate roles for the other levels of government to play in order to ensure adequate levels of protection and in providing funding support. During the past 20 years, the federal government has taken a larger role in helping ensure that every citizen has a safe drinking water supply and that the Nation's water bodies are clean. This involvement has been both in setting minimum national standards and also supporting the financing of needed infrastructure improvements.

The Administration's current and proposed funding levels for wastewater and drinking water infrastructure will substantially finance the amounts needed to meet CWA and SDWA requirements.

CHALLENGES AHEAD

Let me now turn to the challenges ahead in wastewater and drinking water. Over the last twenty years or so, the Nation has invested heavily in building a modern, effective wastewater treatment and drinking water network. And yet, as you are well aware, many of our communities are facing very large needs in both of these areas.

Infrastructure Replacement

In both wastewater and drinking water, we have two primary challenges: replacement and improvement. Since 1970, we have invested over $60 billion in federal funds toward the construction and improvement of 15,000 wastewater treatment facilities. Many of these wastewater facilities are approaching the end of their useful lives. There is also increasing evidence that our underground infrastructure -- our sewer systems -- is in serious need of attention. In some regions of the country concrete sewer systems are literally being eaten away by the sewage they carry and naturally occurring compounds in the soil around them. Breaches of sewer integrity can result in significant ground water and surface water contamination. This year, the Agency will begin a limited effort to estimate the extent and impact of these problems. Of course, assistance through the SRF program will be available to help address these problems. These and other replacement issues will continue to be a significant challenge for the partnership.

EPA continues to emphasize technical assistance efforts, such as the Municipal Wastewater Pollution Prevention program and the Operations and Maintenance program, which provide much needed assistance to both large and small communities. These programs emphasize State and local capacity to ensure the maximum useful life of facilities, adequate planning for rehabilitation and replacement, as well as hands-on assistance and training for operators.

Drinking water system infrastructure has been neglected during the past 30 years, as State and local governments have failed to maintain their systems during

tough budget times. Older systems, particularly those in the East Coast, have deteriorating distribution systems. Some systems still have portions of their distribution system made from wood dating back to the 1800's.

Clean Water Improvement

While our investments in secondary treatment have resulted in very real, even dramatic, water quality improvements, municipal wastewater remains a significant source of pollution to many of our Nation's waters. In fact, of the waters that were assessed, municipal sources are still responsible for 15% of the impairments to our rivers, 21% to our lakes, and 53% to our estuaries. These impacts are also reflected in the latest Needs Survey. The needs associated with advanced treatment, which provides an added level of safety for waterbodies that are more fragile or more sensitive, accounts for $10 billion of the increase between 1988 to 1992.

Combined Sewer Overflows and Stormwater Discharges

I know all of you are also aware of the serious threats to water quality posed by CSOs and stormwater discharges. CSOs occur primarily in older urban areas where sanitary sewers and storm sewers are interconnected, resulting in direct discharges of untreated sewage usually during storms. Unfortunately, CSOs also effect some of our most precious water resources, including Long Island Sound and New York Harbor, Boston Harbor, the Chesapeake Bay, and Puget Sound, to name but

a few. Correcting the problems posed by CSOs will be a major challenge in the years ahead. The 1992 Needs Survey estimates $41 billion to correct these problems.

Stormwater from municipal and industrial sources is estimated to be responsible for 30% of the remaining known impairments to water quality. Stormwater contamination is also very difficult to address. In fact, contamination is often due to some very common-place, every day activities. Polycyclic aromatic hydrocarbons or PAHs and oil and grease come from our automobiles; sediments, pesticides, and nutrients wash off our lawns and gardens; salts runoff in the snow melt from our roads; and litter finds its way into almost all of our waterways. Additionally, industrial activity can contribute high levels of metals and other toxics.

Drinking Water Improvements

Improvement is also the main challenge for our drinking water systems. Of the Nation's drinking water systems, approximately 10% are very large and serve roughly 90% of the population. The remaining 90% of the systems are very small and most cannot afford to keep pace with the ever increasing regulatory burdens mandated by the current SDWA. Currently, the SDWA requires EPA to issue regulations for 25 new chemicals every three years. This "assembly line" requirement does not allow the partnership to target its efforts to the highest risk problems and drives many communities to monitor and control for pollutants which are sometimes very low risk and may not even occur in many areas of the country.

Source water protection is also an important challenge for both the drinking water and clean water communities in general. We need to improve our ability to protect both ground and surface waters that serve as drinking water supplies. We also need to ensure that our efforts to protect surface waters do not inadvertently cause contamination of important ground water resources.

NEED FOR REAUTHORIZATION OF THE CWA AND THE SDWA

As I indicated earlier, in both drinking water and wastewater we face major funding needs. I believe that a dialogue on how to address these needs will be both appropriate and useful. As mentioned earlier, I believe that the basic services of wastewater and drinking water infrastructure are essentially local responsibilities. However, there is an appropriate role for the federal government to play and that role is essentially regulatory by nature. Regulation under the SDWA and the CWA ensures that we have a safe supply of drinking water across the country and that we protect the natural balance of our ecosystems as well as public health. The Administration is committed to additional federal support for wastewater and drinking water infrastructure for several more years. Our proposals for reauthorization, including funding as well as statutory changes, will provide the partnership with the tools and resources necessary to address the challenges I have just mentioned.

Clean Water SRF Funding

In order to meet the dual challenges of sustaining our national wastewater network and improving that network to ensure the protection of our ecological resources, the Clinton Administration has proposed continued capitalization of the SRF program through 2004. The President's budget proposal included $1.6 billion for FY 1995. For the years 1996 through 2004, *President Clinton's Clean Water Initiative* has proposed authorization levels totaling $11.25 billion, with federal contributions declining over time as repayments to the fund increase and became available again for loans. This would provide a total federal contribution of about $22 billion.

SRF Loan Activity

The SRF program, as envisioned in the 1987 Amendments to the CWA, was intended to provide a perpetual, dedicated, and stable source of funding for wastewater infrastructure. The proposed extended capitalization of the CW-SRF program would ensure the long-term purchasing power of the SRF and allow States to continue to make loans of more than $2 billion annually (in constant 1992 dollars) for the foreseeable future through a combination of area federal contribution levering, and repayment.

Drinking Water SRF Funding Proposal

Similarly, the Administration's commitment to capitalize the new Drinking Water SRF program will greatly increase annual federal support for drinking water

infrastructure. Under the Administration's proposal, SRF funding would initiate at $600 million in 1994, and increase to $700 million in 1995 and be authorized at $1.0 billion annually in 1996 through 1998. Just as important, this program will provide an incentive for a long-term commitment at the State level to meet infrastructure needs, particularly in those States that do not currently have a State funded loan program for drinking water.

While we do not believe it is the responsibility of the federal government to address all drinking water and wastewater funding needs, we do believe it is appropriate to support these programs with funding largely targeted at the added burdens associated with federal regulation. In general, we believe that the proposals for the CW and DW-SRF programs coupled with continued funding through other federal agencies will substantially finance the funding requirements mandated under the CWA and SDWA.

Clean Water and Drinking Water Solutions for Small Communities

Let me now discuss some of the other opportunities before us to substantially improve the CWA and the SDWA. *President Clinton's Clean Water Initiative* and the ten key recommendations for Reauthorization of the SDWA contain proposals which would significantly improve the ability of both programs to serve the needs of rural and disadvantaged communities.

Included in our proposals for the CW-SRF are provisions for negative interest loans and extended repayment periods for those communities most in need of

additional assistance. Additionally, the Administration proposes relaxing some of the federal "equivalency" requirements (i.e. Title II requirements which apply the first time federal SRF funds are used by a State for loans to municipalities) in the CW-SRF which may be unnecessarily burdensome for small communities.

The Administration also supports a wide variety of reforms designed to improve the flexibility of the SDWA, including extended repayment periods for disadvantaged communities. We also strongly support eliminating the requirement for 25 new drinking water regulations every three years, so that EPA and the water supply industry can turn their attention to the problems that pose the most significant health threats. Further, we have recommended an alternative, technology-based approach to allow small communities even greater flexibility to find the most cost-effective ways to protect their customers.

Innovative Financing

The Administration's new executive order on infrastructure (No. 12893) seeks to improve the understanding and consideration of costs and benefits of all our infrastructure investments. In both the wastewater and drinking water areas, EPA plans to examine these issues at a national level (not at the project level) and will submit a preliminary report with our 1996 Budget submission to the President. The Administration is also committed to applying market-based incentives to the CWA program, such as point/nonpoint trading.

In both the drinking water and wastewater arenas, local officials are in the best position to develop capital financing structures that meet their particular needs. We find that communities throughout the Nation are taking the lead in "reinventing government" and acknowledging the ability of private capital to enhance public investment.

EPA is committed to supporting these communities and providing them the opportunity and the flexibility to pursue innovative financing such as public-private partnerships in order to build the infrastructure systems needed to achieve the environmental protection our citizens demand. This effort is an integral part of our strategy for narrowing the gap between wastewater and drinking water needs and increasingly scarce federal, State, and local resources.

Watershed Targeting

EPA plans to begin integrating the CW-SRF program into the overall watershed approach. As I mentioned earlier, it is vitally important that we focus our limited resources on the highest risk problems. The infrastructure executive order not only asks us to better document the costs and benefits of our infrastructure investments, but also challenges us to better target our efforts to increase the benefits of our investments.

The Administration also supports expanding eligibilities for municipalities to use for CW-SRF assistance to include restoration and protection of riparian areas, initial

capitalization of wetlands mitigation banks, water use efficiency projects, and pollution prevention projects.

Addressing Wet Weather Problems

The Agency has just issued a new national policy on CSOs which calls for national flexibility and better science so that we can focus our efforts and limited resources on those natural areas most effected by CSOs. To address stormwater discharges, the Administration proposes sweeping reforms of the CWA. We propose to replace essentially unworkable and extremely expensive regulatory controls with a phased approach to stormwater management. This approach begins with best management practices and applies regulatory controls only in the most intractable situations. Again, the emphasis is flexibility; finding the right solution to fit the unique problems of individual watersheds.

CONCLUSION

I want to thank the Committee for this opportunity to testify on our wastewater and drinking water infrastructure. Again, I want to express my belief that the changes we are currently experiencing in the partnership between local, State and federal governments will only better prepare us for the challenges that lie ahead. We have a vested interest in maintaining our existing infrastructure to both protect the important and valuable water quality gains we have achieved over the last twenty years and to maintain the high level of protection provided by our drinking water

systems. We also must continue to improve these systems to fully protect our fragile water resources and to extend a high level of protection to all of our citizens.

Also, we have an unusual opportunity before us, with the reauthorization of both the SDWA and the CWA, to improve and strengthen the infrastructure partnership for drinking water and wastewater.

Thank you again and I look forward to your questions.

* * *

ASIWPCA

Association of State and Interstate
Water Pollution Control Administrators
750 First St., NE, Suite 910, Washington, DC 20002
(202) 898-0905 • Fax (202) 898-0929

Association of State and Interstate
Water Pollution Control Administrators (ASIWPCA)

Testimony of the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA)

CLEAN WATER ACT IMPLEMENTATION

SUBJECT: WASTEWATER INFRASTRUCTURE NEEDS

Before the Subcommittee on Investigations and Oversight
United States House of Representatives

Presented by:
Roberta Haley Savage
Executive Director and
Secretary/Treasurer

May 4, 1994

Room 2167 Rayburn House Office Building

Mr. Chairman, my name is Roberta Savage, Executive Director of the Association of State and Interstate Water Pollution Control Administrator's (ASIWPCA). As you know, ASIWPCA established in 1961 is the national, professional organization of State officials Responsible for the daily implementation of the Clean Water Act. I appreciate the opportunity to appear before you today to present the States' perspective on wastewater infrastructure needs.

As we have discussed previously, tremendous strides have been made since enactment of the 1972 Clean Water Act in cleaning up and protecting the environment States have gained considerable experience over the past two decades and I come before you today to share their experience and expertise. ASIWPCAs testimony today is premised on the following principles:

1. **The Clean Water Act is fundamentally sound.** However, some refinements are necessary to improve program effectiveness, including:

   - **Increased funding for State management under Sections 106 and 319, the State Revolving Loan Fund (SRF) and appropriate permit fee programs**

   - **Continued Federal capitalization of the SRF.**

   - **Increased State flexibility to operate programs more efficiently and effectively to maximize environmental results and undertake comprehensive approaches.**

   - **Elevated USEPA priority on program fundamentals** specifically, up-to-date effluent guidelines and scientifically sound water quality standards.

   - **Enhanced nonpoint source management programs.**

2. **States must continue to have the lead role in program development and management.**

3. **Additional time and resources are needed to carry out the 1987 Amendments.** The impact of the lack of funding, inadequate technical resources and late issuance of policy and regulatory guidance need to be considered in determining what legislative changes are truly needed at this time.

4. **Additional mandates must be accompanied by State flexibility and adequate funding (above the current baseline.)**

SUMMARY RECOMMENDATIONS

Because municipal pollution from treatment plants and runoff cause major localized and national environmental problems, the Association recommends the following actions to significantly improve the program and maintain momentum.

* $5 Billion in Federal seed funding annually should be authorized for the SRF to meet Clean Water Act mandates.

* The SRF program should be streamlined to build the most projects for the Federal funds available, in the shortest time frame, at reasonable cost.

* Small hardship communities should be assisted, under the umbrella of the SRF, in the form of principal subsides.

* The Act should support the Agency's policy on controlling combined sewers recently promulgated. This policy is the result of a collaborative effort between the States, the cities, the USEPA and the environmental community.

* The stormwater program should be revised to focus more narrowly on priority water quality problems, with workable permit requirements.

WASTEWATER INFRASTRUCTURE NEEDS

Under the covenant struck between Congress, the Administration and the States, the 1987 statute authorized $18 billion for the construction of municipal wastewater treatment facilities $8.4 billion of which was to capitalize the SRF for more than $78 billion in pre-1987 Act needs.

The reauthorization of 1987 expanded the responsibilities of State and Local governments to include many new mandates for which implementation is currently underway. States now estimate that there are in excess of over $200 Billion in outstanding wastewater needs. This is a conservative projection, because many existing facilities constructed under the 1972 Act are reaching their design life and thus will require major rehabilitation and replacement. The total need is not fully reflected in the USEPA Needs Assessment, because the Act's requirements have not been fully incorporated into the existing facility planning process. These expanded mandates relate to:

* More stringent water quality standards (.e.g. advanced treatment for toxics),
* Antidegradation adaptation policy requirements,
* Sludge management,
* Stormwater permit requirements,
* Nonpoint source control,
* Estuary protection, and
* Combined sewer overflow correction.

FEDERAL FUNDING LEVELS

To continue and strengthen the State/Federal/Local partnership, Congress must provide a "fair share" of financial assistance for States and communities to meet Clean Water Act mandates. The 1987 Amendments were visionary. Beyond question, the SRF has been their most successful program. As you

know, Mr. Chairman, all 50 States have created and implemented SRF programs. SRFs are popular programs, meeting "customer needs" in a much more effective and efficient manner than the grant program. Projects are cheaper to construct and are completed 50% faster than under the grants approach. The SRF rewards initiative and compliance. However, an SRF program capitalized at only $8. Billion is not adequate to satisfy more than $200 Billion in existing needs.

The challenge before this Committee is to use the very limited Federal funds efficiently and effectively to equitably bring municipalities into compliance and assure they stay there. The SRF is the only viable mechanism, to leverage Federal seed funding. And, when leveraged, funds can be increased from 2-5 times, to revolve in perpetuity as a source for local clean water support. Regrettably, Federal appropriations have fallen significantly, to a $1.2 Billion level in FY 1994. To adequately capitalize the SRF, further Federal seed funds are needed and well worth the modest investment required:

- **ASIWPCA supports the SRF and recommends that *all* Clean Water infrastructure assistance be incorporated under the Title VI umbrella.**

- **$5 Billion should be authorized annually for the SRF.**

ASIWPCA does not support the re-creation of a national grants program for municipal wastewater treatment plant construction. When President Reagan proclaimed that the grants program would soon be dead, the States took that proclamation to heart. States worked diligently to establish SRFs and phase out their grant programs. To come back now and reignite the feeding frenzy will certainly undermine existing SRF programs and encourage communities to hold out for the possibility of a future grant rather than move ahead toward compliance. The grants mentality reinforces the notion that if a community puts off addressing their problems long enough, the Federal government will come to the rescue. This sends the wrong message and penalizes those cities and towns that took initiative to address their clean water responsibilities. In today's budgetary climate, grants are no solution. Under a grants regime, funding annually would be required far in excess of $10 Billion to make any measurable progress nationally.

As this Committee is aware, Clean Water Act funds are not the only Federal mechanism supporting wastewater treatment construction. In the States, SRF activities are coordinated with those of the Farmers Home Administration (IHA) and the Community Development Block Grant (CDBG) Program in order to best meet community needs. Often packaging together various Federal and State infrastructure, technical and administrative assistance is critical to moving projects forward. While these efforts should be encouraged, States oppose mandating such coordination. The SRF is a State program! It is not accountable for how various Federal agencies relate to one another and loans should not be second guessed based on vague Federal concepts.

INNOVATION

A. Small Community Assistance

This is an area where the SRF needs to be restructured to meet small/hardship community needs. In tracking over 15,000 small communities of less than 10,000 population we find that over the next 10 years:

- Small/hardship communities need wastewater funding in excess of $10 billion.

- Over one-third of current SRF projects are for small communities.

Although many small communities are financially capable, in approximately half of the States, more than 50% of those needing construction for all projects costs cannot afford the debt service on a SRF loan. In our experience we find that the smaller the community, the less viable the SRF. This is due in large measure to the lack of financial and management resources, coupled with the economies of scale.

Recommendation:
States believe that additional assistance should be provided under an existing program administered by the States, (in essence "one stop shopping"). We suggest that Title VI be amended to provide a supplementary authorization in Title VI for small hardship communities under which States could:

1. Define, within reasonable USEPA guidelines, what constitutes a small hardship community. Because of the diversity of factors, no one national number will suffice. States need to be provided with the flexibility to blend principle subsidies with SRF loans to achieve a target State means test of project affordability.

2. Make eligible planning, design, construction, and acquisition of land/easements.

3. Exempt recipients from Title II and Federal "cross-cutter" requirements, including the Davis Bacon Act, where appropriate.

4. Allow up to 40 years for loan repayment for projects less than $10 Million, as long as the useful life of the facility is not exceeded.

5. Enable States to use a reasonable amount of administrative funding for small hardship community outreach and technical assistance.

By focusing on the objective of "affordable treatment" equity is assured and compliance is achieved at a minimal cost. With a supplementary appropriation, the corpus of the SRF will not adversely affected.

B. State Revolving Loan Fund Program Refinements

It has been the experience of the States, in implementing the SRF, that program enhancements are essential to expedite and improve performance and enhance program attractiveness to the ultimate consumer -- local governments. At the same time, the States need a consistent source of management funding to assure progress and program implementation.

State Administrative Costs -- As defined by USEPA, only 4% of the capitalization grant is available for State program administration. This is inadequate to run an effective program

nationwide because the accumulated size of the SRF is not considered. When capitalization grants end, so do funds for administration.

Recommendation:
The 4% administrative allowance should be tied to the authorization level, with a minimum of $400,000 per State. No limitation should be placed on other contributions to the Fund (e.g. using loan repayments, bond proceeds, State funds, or other monies).

Requirements -- Each Title II Federal requirement applied to the SRF increases costs and construction time. This is problematic to the loan program. And, the States must ask why Congress is willing to apply more stringent requirements in the Clean Water SRF program than they are proposing for a Drinking Water SRF. Further, if monies can be moved from one SRF to another, as proposed in the Senate, Bills, how are the States expected to meet all the needs, address the Federal requirements and avoid inequities in either program?

Recommendation:
From ASIWPCA's perspective the Act should clarify that only requirements specified, in their entirety in Title VI, apply.

- Cross-cutters: Federal cross-cutting laws, such as the Davis Bacon Act should not universally apply.

- Eligibilities: Since the SRF was created to fund projects broadly eligible under Sections 212, 319 and 320, the 20% limitation in Title II on use of funds (e.g. for collector sewers, rehabilitation, combined sewer overflows, etc.) should not apply.

- Title II: While, some Title II objectives have merit in the administration of the SRF, States should have discretion to apply them as appropriate. At a minimum, the following modifications to Section 602(b)(6) are necessary. Delete:

  * Section 201(g)(5), Innovative/Alternative Analysis
  * Section 201 (6)(g), Recreation/Open Space Requirements
  * The word "proportional" in Section 204(b)(1), User Charge Requirements
  * Mandatory value engineering in Section 218

Eligibilities -- The SRF should provide "one stop shopping" for the broad spectrum of water quality needs under the Clean Water Act -- be they traditional sewer plants, nonpoint source controls or non-traditional solutions to priority water problems in the States. While the SRF was created by Congress with extremely broad eligibilities, the tendency of program managers at USEPA has been to limit State use of this vital tool, due to the enormous amount of unmet needs. From the States' perspective, that is exactly why States

need latitude in setting priorities and allocating funds. Uses of the Fund are not going to be the same for Pennsylvania, Oklahoma, Ohio, Wyoming, California or South Dakota. States see a tension, particularly in the Senate, between a desire for broaden flexibility and on the other hand the desire to prohibit eligibilities based on perceived benefits and some notion of what is appropriate public policy. Such contradictions must be eliminated in the reauthorization process, in favor of the States. States are unable to be innovative if there hands are tied.

Recommendation:
The broad eligibilities of the Act should be maintained and expanded to include acquisition of land, easements and rights of way.

Loan Amortization Period--

Recommendation:
States should have flexibility to extend the 20-year loan repayment period up to 30 years for small hardship communities and up to 40 years for those with projects less than $10 Million.

Federal Oversight --

Recommendation:
USEPA and/or Inspector General oversight should be terminated within a reasonable period. States should be allowed to utilize the Single Audit Act to satisfy the requirements of the Clean Water Act. Oversight should be terminated for:

- Intended Use Plan Review -- One year after last capitalization grant.
- Annual Report -- One year after last deposit of Federal money.
- Annual Review -- Two months after last annual report.
- Annual Audit -- Two years after last deposit of Federal money.

Needs Survey--

Recommendation:
In conjunction with the States, USEPA should be required and funded to conduct periodically a credible survey of all needs eligible for SRF financing under the Act.

Title II Closeout--

Recommendation:
States should be authorized to broadly utilize Title II de-obligations and reallotments of SRF funding. Title VI administration funds should not be used to close-out the construction grants program. This undermines the credibility of effective SRF management.

Planning Setaside--

Recommendation:
Because planning is addressed and funded in other sections of the statute the 40% Title II pass-through to local governments should not apply to Section 604(b) funds.

C. Combined Sewer Overflows (CSOs)

In the past, efforts to address CSOs were stymied by lack of understanding, lack of funding, and a lack of consensus on a workable approach and a reasonable time frame. Through intense negotiations by States, cities, USEPA and the environmental community, a consensus was reached. The recently promulgated USEPA regulation setting the correction course for CSO should be supported.

Recommendation:
The Clean Water Act reauthorization should codify the USEPA regulation.

D. Stormwater

ASIWPCA supports the stormwater control objectives currently embodied in the Clean Water Act. However, as constructed the program may overwhelm and undermine the State NPDES permit program. This is because of the extremely large number of additional NPDES sources and permits to be addressed. The Clean Water Act requirements need to be more consistent with the funding available. We should also be mindful of what our water quality expectations/benefits really are. The most significant sources should be addressed first, in a manner in which all parties clearly understand expectations and the potential for achievement.

Recommendation:
The first round of permits should emphasize specific control levels (management measures), followed by water quality assessment to identify needed additional measures to assure reasonable progress toward the ultimate achievement of water quality standards. A realistic schedule is needed to accommodate the phased implementation of the stormwater regulatory programs:

- For municipal dischargers, controls that reduce discharges to the *maximum extent practicable* should be required.
- For industrial dischargers, the first round permits should require implementation of *BMPs*.

Permits should not be required for municipalities less than 100,000 population, unless the discharge significantly contributes to pollution or the town is served by a separate stormwater system with a total population of 100,000 or more. Permits should not be required for industrial indirect discharges to permitted municipal separate storm sewers, unless the discharge is in violation of local requirements and an individual stormwater permit is needed.

IMPACTS OF FAILURE TO MEET THE NEED

Municipal wastewater treatment has both economic and environmental benefits. As managers of the Clean Water Program, States primary consideration must be directed to:

- Meeting unfunded mandates
- Any reduced capability of the fund to revolve in perpetuity

Perhaps the most valuable aspect of the SRF is its ability, with a modest level of Federal seed funds, to leverage greater contributions in States and the financial marketplace. With this "carrot" States are able to help local communities meet their Clean Water Act compliance responsibilities. To the extent that the SRF is weakened, the delicate cooperative relationship will be jeopardized. Significant progress has been made in 20 years due to commitment at all levels. In order to continue momentum and at the same time move on to new horizons in the nonpoint source arena and prepare to replace thousands of aging facilities -- continued SRF capitalization will be critical. The SRF is a valuable tool in the unfunded mandate debate. Whereas grants would lead to a "do nothing" attitude in the regulated community.

SUMMARY

Mr. Chairman, the States appreciate the fact that you and this Committee have recognized the need for program refinements and enhanced program funding for which we are most appreciative. And yet, through the appropriations process, we are each year finding ourselves further and further behind the "eight ball." The financiers say there is no new money and that may well be so, because we have seen water funding go down to offset increases for the Air Act, the Drinking Water Act, etc.. This raiding of the water budget must stop. We must remind our nation that water is the substance of life, our most precious and most taken for granted natural resource. It is also the ultimate sink for all the world's pollution load. As we address Clean Water Act reauthorization, we look to you to help bring about workable and appropriately funded programs.

The ASIWPCA members, my staff and I are readily available to assist you in any way we can to assure clean water reauthorization supported by adequate funding.

Thank you, Mr. Chairman, for your personal interest, your insight, and for your leadership in the protection of our waters. We at ASIWPCA enjoy working with you and your fine staff and we appreciate having the opportunity to share with you the perspective of the State officials responsible for Clean Water Act implementation.

ASIWPCA

Association of State and Interstate Water Pollution Control Administrators
750 First St., N.E., Suite 910, Washington, D.C. 20002
202-898-0905 • Fax 202-898-0929

CLEAN WATER ACT REAUTHORIZATION:
The States' Perspective

by
Roberta Haley Savage*

Water, our most precious and vital natural resource, has long been the subject of national debate. Congressional interest in the protection of water quality dates back to the 1890's. In those days, clean water legislation was primarily a statement of general goals and direction, as opposed to the contemporary legislative and prescriptive mandates we now encounter.

THE STATUTE

The mix of interests and politics was never more prevalent than during the 1970s. Earth Day brought a new national consciousness, the U.S. Environmental Protection Agency (USEPA), and both the Clean Air Act and the Clean Water Act (officially known as the Water Pollution Control Act Amendments of 1972, Public Law 92-500) passed during this time.

The 1972 water statute imposed a patchwork of technology based controls, water quality standards, planning requirements, compliance deadlines and penalties, and created a municipal grants program for the construction of wastewater treatment facilities. The Act anticipated that within 10 years, all sewage facilities would have secondary treatment systems installed. The Act also put into place a long range goal for zero discharge of pollution into our nation's waterways resulting in fishable/swimmable waters throughout the country.

As the federal dollars began to flow to state and local governments, what had once been a structure of 50 individual State programs emerged into a national clean water collage and by the mid 1970's, states began reporting to Congress on the status of their programs.

THE PROGRESS

Since passage of the 1972 Clean Water Act, programs have yielded significant results. In an effort to document the program's success, the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) developed, in 1984, a national status report on the health of our nation's waterways between 1972 and 1982. ASIWPCA, representing the 50 state regulatory agencies, 6 interstate commissions, and trust territories in cooperation with the US Environmental Protection Agency (USEPA)

designed a concise, standardized reporting format for completion by its membership. Using the ASIWPCA format, the 50 states created the first nationwide comprehensive water quality status report utilizing:

* Long-term trend monitoring records,
* Short-term intensive surveys, and
* Professional judgments and direct observations.

ASIWPCA documented that, despite the tremendous industrial and population growth pressures of the past decade, the quality of most waters improved or maintained at existing quality levels. Other waters showed dramatic improvements, while regrettably, some waters were degraded. As more traditional problems were addressed, other problems such as nonpoint sources, toxic pollutants and groundwater contamination received attention. Now, with two decades of clean water program experience, the states are once again developing their clean water report. ASIWPCA's Status and Trends Report to Congress and the American people will be published in May of 1994. This report will document the status of our nation's waterways between 1972 - 1992.

Early data collected by ASIWPCA indicates that great progress has been made in national water clean-up during the past two decades due in large measure to the combined efforts of state, federal, and local agencies who have carried out the Congressional mandates since 1972. With the support of public and private constituencies, reinforced by a strong citizen commitment, the clean water program has resulted in:

* Enhanced water quality in most streams and lakes,
* More waters that support designated uses,
* Expanded recreational uses,
* Increased populations being served by adequate wastewater treatment,
* More direct and indirect dischargers in compliance with water treatment requirements,
* Greater public awareness and interest in sustaining past gains and making future progress,
* Better handling of sewage sludge,
* Control and elimination of various combined sewer overflow problems, and
* Tremendous improvement in plant operations and management through expanded skill, expertise and knowledge.

Comparing 1972 data with the 1992 305(b) National Inventory report, the facts indicate remarkable improvements during a period of expanded industrial development and population growth.

River Miles	1972	1990	
Support Designated Uses	272,000	515,568	89% increase
Partially Support Uses	46,000	160,965	49% increase
Not Supporting	30,000	80,442	100% increase
Unknown	410,000	110,000	
Total Assessed	348,000	756,975	118% increase

Lake Acres (Millions)	1982	1990	
Support Designated Uses	13.8	10.2	26% decrease
Partially Support Uses/Threatened	1.7	6.4	276% increase
Not Supporting	0.4	1.7	325% increase
Total Assessed	15.4	18.3	15% increase

Rivers: The Clean Water Act has been effective in controlling municipal and industrial point sources. After 20 years:

* Industry is responsible for 7% of miles impaired.
* Municipal point source is responsible for 15% of miles impaired.
* Nonpoint sources are the major cause of impairment. The major sources are in impacted waters:
  - Agriculture in 72%
  - Municipal runoff and storm sewers in 28.7%.
  - Hydrologic modification and silvaculture in 7% respectively
  - Resource extraction in 11%.

[Note: Waters may have more than one major source of pollution.]

The following pollutants were identified as a significant cause of the impairment. Numbers reflect percentage of river miles degraded by various causes with minor to major impacts:

. Siltation 45%
. Nutrients 37%
. Organic Enrichment/oxygen demand 24%
. Pathogens 27%
. Pesticides 26%

[Again, waters may have more than one significant cause.]

Lakes: After 20 years:

* Municipal point sources are responsible for 21% of acres impaired.
* Nonpoint sources are the major cause of impairment. The major sources are:
    - Agriculture in 56% of miles impaired.
    - Municipal in 24%(including stormwater).
    - Hydrologic modification in 23%.
    - On site waste disposal in 16%

The Causes of Water Pollution: The national understanding of the water pollution problems in 1972 focused on the need to control the massive discharges from major point sources. Over the years, our knowledge of the pollutants and sources causing problems has vastly expanded. As environmental programs moved beyond the traditional point source approaches to address the cross-cutting themes of risk assessment, watershed protection, and pollution prevention, environmental program managers will need to focus their creative energies on the:

* Protection of the ecosystem intrinsic to the Clean Water Act (e.g. for nonpoint sources, watershed protection, wetlands management and surface and groundwater management).

* Problems to be prevented rather than resolved by end-of-pipe solutions. The pollutant causing these problems are, again, primarily conventional (e.g. ammonia, low oxygen, etc.). In the following percentage of lake acres, these pollutants were identified as significantly causing the impairment:

Metals	47%
Nutrients	40%
Organics Enrichment/Oxygen demand	24%
Suspended Solids	22%
Organic Chemicals	20%

Other -- There are other pollutants, such as salts from irrigation runoff and salt water intrusion into ground and surface waters. Abandoned mines and air deposition (acid rain) can alter the toxicity of chemicals in water and render lakes and streams unfit for aquatic life. While the past 20 years of focused attention on clean water have yielded impressive results, major challenges remain. For example, some communities are still in need of adequate wastewater treatment. To ensure plant efficiency, proper operation, maintenance and replacement of existing facilities must be assured. In addition, the effects of toxic pollutants must be better managed,

and nonpoint source pollution, estimated to be upwards of 50% of our nation's remaining water pollution problem, also must be reduced. Expansion of the states' groundwater protection programs also should be facilitated. Proper Standards and Appropriate Application Remain a Challenge.

INFRASTRUCTURE FUNDING

The costs of clean water are enormous. The American people are demanding construction of wastewater treatment facilities for clean, pure water while at the same time calling on a reduction in the cost of government. The State Revolving Loan Fund (SRF) created in 1987 to fund the construction of wastewater treatment facilities is fully operational in the 50 states.

Current SRF-eligible needs resulting from the 1987 Act (including nonpoint source, stormwater, combined sewer overflows, sludge, and control of toxic substances) go far beyond the previously existing wastewater infrastructure program upon which the $18 billion commitment in the 1987 Act to the fund was based. The current capitalization level is grossly inadequate to meet the new mandates included in the statute. Of the $138 billion in ASIWPCA documented needs, states have identified up to $91 billion that related to emerging priorities. As the 1987 Act's requirements force plant upgrading, the total need is likely to exceed $200 billion.

The SRF has proven to be an efficient and effective use of scarce federal dollars. It has provided a mechanism to fund municipal infrastructure needs *in perpetuity.* According to the position of the ASIWPCA and the nation's governors, a minimum of $5 Billion annually should be authorized for FY 1994-2000 in the SRF to meet clean water needs. This amount would be in addition to authorizations for nonpoint sources, Section 106 State management, etc.

Grants: ASIWPCA opposes the re-establishment of a Title II type construction grants program. Re-emergence of the grant program has distracted from the immediate need to sufficiently capitalize the SRF and equitably address needs.

Water pollution is a broad term, often conjuring up images of spills, raw sewage, chemicals spewing from factory pipes, and medical wastes washing down storm sewers and onto public beaches. But there are other problems which can be more widespread and less obvious.

Nutrients -- Nitrates found in fertilizers and phosphates found in detergents overstimulate growth of aquatic plants, depleting dissolved oxygen and cutting off light. This seriously affects the respiration of fish and aquatic invertebrates, decreases animal and plant diversity, and inhibits recreational use. Lakes and estuaries are particularly vulnerable.

Sediments -- When it rains, slit and other suspended solids wash off plowed fields, construction and logging sites, urban areas, and strip-mined land -- carrying with them attached pollutants. When they enter waters, fish and plant productivity is reduced.

Bacteria and Viruses -- Certain waterborne bacteria, viruses, and protozoans can cause human illnesses such as typhoid, dysentery and skin diseases. They enter waters via a number of routes, including sewers, stormwater drains, septic systems, runoff from livestock pens, and boats that discharge sewage.

Organic Enrichment -- Organic material enters the water in many forms. Sewage, leaves and grass clippings, or runoff from urban streets, livestock feedlots and pastures. As natural forces break down this organic material in water, dissolved oxygen is depleted. When the level drops too far, many types of fish and bottom dwelling animals cannot survive.

Toxic Chemicals/Heavy Metals -- Metals (such as mercury, lead, and cadmium) and toxic organic chemicals (such as PCBs and dioxin) may originate naturally and come from industries, city runoff, mining, landfills, etc. They can cause aquatic disease or reproductive failure and pose human health risks.

Pesticides/Herbicides -- Rainfall and irrigation can wash pesticides and herbicides used on farm land and residences into ground and surface water. Contaminants can be persistent and may accumulate in fish, etc. to levels that pose a risk to human health and the environment.

The integrity of the SRF has been among the states' highest priorities. Under SRF, projects are being built 50% faster and cheaper than with the traditional grants. Historically, local governments have delayed compliance to seek grants rather than proceed with construction, e.g., using the SRF. Grants send a poor message to those trying to meet the law -- reinforcing the appearance that if a community puts off addressing their water quality problems, the federal government will come to the rescue. If Congress is intent on re-energizing the grants program, it should be incorporated into existing SRF.

Habitat Modification -- Loss of habitat occurs when waters are modified by farming, deforestation, channelization, dredging, wetland destruction, etc. Vegetation can be lost, bottom dwelling organisms and spawning beds can be smothered or scoured, and water temperatures can increase.
The needs of small and, in some instances, "economically distressed" communities should be addressed under a "principal subsidy" mode in the existing SRF. This would allow states, with a supplementary authorization, to blend subsidies with loans to achieve an affordability test. Individual states can adjust their programs, as appropriate, to accommodate environmental needs.

WATER QUALITY STANDARDS

Water quality standards (i.e., the level of clean desired in a particular water body) have been a keystone of state implementation of water quality laws for almost 25 years. Given the diversity of natural environments throughout the nation, a balance between state flexibility and the need for a level of national consistency has been significant.

The primary responsibility for establishing water quality standards must remain with state and interstate agencies, where local conditions can be considered. State experience illustrates that standard setting and implementation is a difficult and intensive process. Implementation suffers from outdated federal criteria and the lack of clear national policy in key areas on applying water quality criteria. Confusion and unnecessary challenges to state standards have resulted. This is particularly true during development of individual control strategies and while promoting pollution prevention. In moving forward with national policy refinement, it is important to recognize that:

1) Not all water bodies can or should be "fishable" or designated for public water supply use. (e.g., Houston Ship Channel or western streams created, in fact, by discharges).

2) Subsistence fishing will not always be feasible because of naturally occurring or in place pollution.

3) There is a need to fully consider narrative as well as numeric criteria, along with biological as well as chemical indicators.

NONPOINT SOURCES (NPS)

Nonpoint source pollution is responsible for significant water quality degradation. Because NPS control must take into account local conditions (e.g., land based activities, typography, hydrology, climate, etc.), states must continue to have a lead role in program development and management.

Changes in the Act are needed to achieve more significant environmental results. In order to build long term capabilities, the states would like to move away from "demonstration projects" (e.g. only a selected few sites in states) toward institutionalizing programs in all states. As recognized under section 208 in the Act of 1972, NPS control is a long term undertaking comparable to point source control, but with a much higher level of public intergovernmental cooperation necessary. Section 208 and section 319 management plans should provide the framework of priorities that a myriad of agencies will carry out at all government levels. Progressively, the program should incorporate needed technologies, transfer of relevant data, technical assistance, education programs, pollution prevention, and source reduction. State recommendations on NPS are premised on the principles that:

1) Nonpoint source research and development needs much more attention, (e.g. development of control technologies, establishment of standards or criteria, and better analytical decision making).

2) A stronger framework should be established to implement NPS programs requiring that:

   * the USEPA implement actions that increase public awareness, develop scientific approaches, create regulatory/economic incentives, and issue guidance for evaluating state programs;

   * the states, in a phased process should undertake the following steps:

A) Identify priority waters, set goals, establish implementation mechanisms and develop a NPS monitoring program;

B) Evaluate progress towards meeting water quality standards;

C) Update the program as needed to address water quality violations.

3) Nonpoint source program funding under Section 319 should enable the states to focus, as appropriate, on (a) planning, (b) technology development, (c)technology transfer, (d) monitoring, (e) assessment, (f) demonstrations, (g) technical assistance, and (h) institutionalizing non-traditional water quality management programs. This must include a method for funding and implementation. Adequate 319 funds must be available, with a more efficient delivery system to states.

* Section 319 program needs to continue to cover implementation costs not reasonably addressed through the SRF.

* The state goal is to move the NPS program to a point where it can be successfully integrated into Section 106 and SRF structures.

* A set formula should be used to distribute funding to states. National "setasides" should be eliminated. Such "setasides" increase administrative demands inordinately at the expense of environmental benefit and often undermine long term state and local support.

* State use of grants should be based on submittal and approval of a Section 319 nonpoint source implementation plan (NIP).

* From any nonpoint source grant, the states should be allowed to use up to 20% or $200,000, whichever is greater, to cover costs of implementation.

Funding Level and Matching Requirements:
To adequately fund the nonpoint source program and assure long term environmental results, the states have identified the following funding level needs for Section 319:

* For FY 1994-96: $500 million Annually
* For FY 1997-98: $1 billion Annually

The existing requirement of a 40% match should be retained.

* For the nonpoint source programs to be successful and to assist states in meeting their clean water program goals, all related federal government activities and programs should be consistent with state plans.

WETLANDS

Wetlands are an extraordinarily valuable resource, critical to the hydrologic system. Despite relative scarcity, wetlands continue to be destroyed and protection programs continue to struggle. State and federal programs, while slowing the rate of loss, have fallen short of providing appropriate protection, even though feasible alternatives exist. Those efforts need to be reinforced and enhanced.

States and localities have been calling for an explicit and well thought out partnership role in the Clean Water Act to promote assumption of greater responsibility and more active participation in wetland protection and management. Many of the changes needed in the present Section 404 could be achieved administratively under existing law. However, a separate new section of the Act is needed to clearly establish state and local roles as well as define protection policies and goals, that include the federal family of agencies. State and local governments need to integrate wetland protection into pollution control and watershed management. The Association endorses the concepts adopted by the National Governors' Association in February 1992.

1) National wetlands protection policy should vigorously abate the loss of wetlands and achieve no net loss by preventing avoidable or significant impacts, while restoring, when feasible, water quantity and quality. If impacts are unavoidable, wetland losses should be minimized and fully mitigated. Due to the severity or significance of some projects, mitigation may be unachievable. Thus, wetland modification applications should be denied.

2) Federal statutes/programs should be amended to strengthen wetland protection and avoid duplication. Lead responsibility should be placed in one federal agency, with other agencies having implementation duties. Federal permitting should be streamlined under one agency -- mandated to protect wetlands. Acquisition programs should be expanded and improved. The Federal government should provide guidance, research,

public outreach and other technical and education information. States should have primary responsibility for implementing effective protection strategies, with broad flexibility based on legal, environmental, social and economic considerations. States should develop comprehensive inventories, expand public outreach, and train local officials. Any Federal legislation dealing with wetlands should:

*

* Address inconsistencies and shortcomings of existing protection programs, (e.g. in USEPA, Army Corps of Engineers, Department of the Interior, and Department of Agriculture).

* Promote state delegation and provide adequate financial/technical support to the states.

* Ensure that federal funds are not provided for activities which result in avoidable wetlands conversion.

3) If states develop water quality standards for specific wetlands and incorporate these standards into state water quality management programs, these standards should be designed to recognize unique features intrinsic into wetland resources. The USEPA should allow use of narrative and site-specific approaches in lieu of numeric standards. Levels of protection should be based upon the importance and significance of wetlands to states in which they are located. In many instances, states already have authority to deal effectively with wetland impacts and current water quality standards can also apply.

GROUNDWATER

According to the states, Groundwater protection is an integral part of water quality protection programs. Components may include regulatory authorities for point and nonpoint sources, monitoring, data management, and standards and remediation programs. They are based on protection of groundwater as a resource with the goal to protect human health and the environment by preventing groundwater pollution and remediating wherever necessary and appropriate. Specifically, ASIWPCA advocates that:

1) Existing authorities be coordinated to ensure that groundwater is not degraded or harmful to human health and the environment.

2) All federal agencies, facilities, and contractors comply with state groundwater laws.

3) Water quality protection programs address both surface and groundwater resources.

Any inclusion of groundwater in the national legislation should formalize the following processes:

* States and the USEPA should jointly define state program adequacy.
* States should develop comprehensive groundwater strategies with determination of adequacy being the state's responsibility.
* Congress, through the USEPA, should provide funding to states for program development and implementation.
* The federal government should review remediation programs and increase funds for comprehensive groundwater pollution prevention where appropriate.
* Congress should appropriate CERCLA (superfund) monies for state groundwater protection upon endorsement of state comprehensive programs.

At a minimum, the federal government should provide incentives for states to develop comprehensive programs by:

* Allowing greater flexibility to states in implementing regulations.
* Developing a comprehensive strategy for all federal groundwater programs.
* Streamlining USEPA oversight.
* Requiring federal agencies to utilize state groundwater protection priorities to help target their programs and projects to areas of highest concern.

STORMWATER

ASIWPCA supports the Act's stormwater control objectives. Consistent with current statute, the most significant sources should be addressed first. However, the extensive time taken to finalize the USEPA rules made the 1987 Act's deadlines for communities unachievable and threatened the Act's strategy of phased implementation. The Act should clarify that the first round of permitting should emphasize specific control levels, followed by water quality assessment to identify needed additional actions based on standards. This will assure that permitting proceeds in a logical and expeditious manner.

Stormwater requirements should not overwhelm nor undermine existing state permit programs under the National Pollutant Discharge Elimination System (NPDES). This is important because stormwater discharges are being labeled as point sources thereby increasing by ten fold the number of total permitees above pre-1987 Act levels. The funding needs far exceed available fiscal resources. Unless action is taken to focus the program on priority programs, major cuts in other programs can be anticipated (including the control of toxic pollutants). Specifically, the states advocate the following reforms:

The statutory deadlines for permit issuance [Section 402(p)] should be revised to establish a realistic schedule that accommodates phased implementation of regulatory stormwater programs:

1) For municipal dischargers, controls that reduce discharges to the *maximum extent practicable* should be required, consistent with the mandate that water quality standards be met overtime.

2) For industrial dischargers, the first round permits should require implementation of Best Management Practices (BMPs).

Permits should not be required for municipalities less than 100,000 population, unless a particular stormwater discharge is a significant contributor to pollution or the town is served by a separate stormwater system with a total population of 100,000 or more. Nor, should they be required for industrial indirect sources that discharge to a permitted municipal separate storm sewer, unless the discharge is in violation of local requirements and an individual stormwater permit is needed.

Following implementation of these controls, water quality assessments should be conducted to determine whether additional controls are required in subsequent permits to meet water quality standards.

RESEARCH AND DEVELOPMENT (R&D)

State and local programs depend, to a large degree, on federal research for development of control technology, establishment of standards or criteria, and assistance with technical decisions. As with standards, effluent guidelines and nonpoint sources, research has received inadequate attention. R&D activities should be enhanced with adequate funding provided under Section 105. Funds should be targeted to research needed to operate and manage water quality programs. The Clean Water Act should be amended to clarify and address the following:

- Nonpoint source best management practices,
- Improved water quality criteria appropriate to NPS pollution,
- Improved models and information for implementing water quality criteria for NPS pollutants,
- Appropriate biological information useful for NPS impact assessment, including bio-criteria,
- Cause-effect relationships between discharges and surface and groundwater quality,
- Relationships between air, water and land pollution, as well as associated health and aquatic life effects,
- Monitoring techniques to assess over time the success of management measures in reducing pollution loads and improving water quality,
- Simple and less expensive waste treatment alternatives for smaller communities,
- Treatment technologies for new industrial processes, and
- Removal of toxic pollutants.

WATERSHEDS

Managing water resources to protect indigenous species and ecosystem integrity goes beyond issuing individual wastewater discharge permits and managing categorical or compartmentalized programs -- to addressing a myriad of pollution problems. There are currently 15 or more clean water funding sources and greater number of independent programs all serving different masters. These revenue and policy sources are uncoordinated, with inconsistent priorities and directions that often fail to adequately consider local needs.

Each Clean Water Act Reauthorization layers on new requirements that in implementation tends to be unrelated. In recent years, for example, to target federal actions, the USEPA has relied on separate priority lists under 304(l), 305(b) and 303 as well as separate plans for standards, monitoring, nonpoint sources, basins, estuaries and individual control strategies. The independent nature of the development and implementation of national policies does not allow states or the USEPA to focus on managing the resource as a whole or achieving priorities. Activities are not tailored or coordinated to meet these needs. "Bean counting" has been our primary measure of success, not whether environmental clean up or protection has been achieved.

The critical issue is not whether the Clean Water Act requirements will be met, but rather what, framework and what timeframe can be developed to

enable authorities to operate effectively and efficiently. A federally based prescriptive framework would undermine state flexibility and creativity in achieving water quality goals.

A more systematic approach to protecting water quality, coordinating funding sources and program authorities toward common objectives is being promoted by the states, USEPA, and a host of national organizations. Because resources are limited, actions should be based on the most serious water quality problems in the immediate, mid and long terms, the best "return on the investment" for water quality, and the appropriate mix between pollution prevention and mitigation as well as point and nonpoint source controls. The rudiments of the solution lie in the basin planning requirements in Sections 208 and 303 of the Clean Water Act. These program plans already exist, but they have not been fully or effectively utilized. The Clean Water Act Reauthorization should take a strengthened approach to water quality management. States and the USEPA should be required to utilize plan recommendations and priorities as the basis for:

* Complementary Clean Water Act mandates,
* Developing annual program plan commitments,
* Funding commitments and allocations,
* Defining appropriate accountability, and
* Conducting needs assessments.

This framework could be easily established by requiring that the management actions authorized under the Clean Water Act be conducted in conformance with both the substance and timing of basin planning efforts in a comprehensive and integrated manner. It is important to take a simple approach or the system will create rather than solve problems. Specifically, the programs need to:

* Update existing and complete any outstanding Section 303 drainage basin plans, with periodic future revisions at five year intervals. The 303(e) plans should:

* Incorporate the results of plans required under Sections 208, 304(l), 319, 320, etc.

* Identify priority problems, sources, and watersheds.

* Prioritize and coordinate Clean Water Act activities
* (e.g. monitoring, standards reviews, permitting, enforcement, 319, lake management, and stormwater).

* All Federal Clean Water Act funding intended for states should be directly allocated to them for distribution in accordance with the priorities in 303(e) and 208 plans.

* Management actions should be consistent with the revised 303(e) plans (e.g. by Federal agencies)

* The public should be consulted and involved in the development of plan revisions.

* The results of these efforts should be reported to Congress under Section 305(b)

For example, if a revised basin plan has identified the priority problems and sources to be: 1) loss of habitat due to sedimentation and eutrophication from nonpoint sources and 2) fish consumption advisories from historic sedimentation contamination -- remedies should be developed and implemented to respond to this finding. Program activities (e.g. monitoring) should be coordinated in a team approach to address them. Resources for that basin should be targeted towards nonpoint abatement and sediment remediation. Permits would be reissued on a logical cycle, but as a secondary priority due to the limited water quality improvements which could be secured with that investment. In this manner, resources and programs could be better targeted to achieve a defined environmental result. Assessment activities should reflect these arrangements.

In another basin, there may be a series of point and nonpoint source impacts that individually comply with permit requirements but have overlapping and perhaps detrimental impacts on the resource. Such a problem cannot be corrected or even identified unless there is a basin approach to monitoring and permitting. A more proactive role for watershed plans would allow a rational basis for prioritizing permit issuance to focus most on those key point sources. Where critical problems cut across basins, issues can be readily identified to receive statewide attention.

CLEAN WATER ACT REAUTHORIZATION - Overview

The state water pollution control administrator's agenda for Clean Water Act reauthorization, developed under the auspices of the Association, indicates that the Clean Water Program of the future needs to be:

* Better financed,

* Focused on systematic, scientific considerations,
* Focused on existing pollution prevention and non-traditional abatement and control approaches,
* Flexible enough that states can focus on priority water quality problems rather than pushing paper (e.g. 10 year permits),
* Multi-media in scope,
* Flexible enough to allow for watershed and integrated environmental approaches to accommodate the wide diversity of water problems/solutions, and
* More cognizant of the interrelationships between local, state and federal governments.

The Clean Water program of the future will depend upon the resolution of a number of political and programmatic issues, for example:

* The priority of domestic programs in the federal budget. The federal fiscal policy of the 1980's was very rough on the states, but, times could change as the balance between military and domestic spending is revisited. The outcome of Congressional budget deliberations will provide the back drop for all that follows, particularly in programs such as Clean Water.

* The role of regional vs. nationwide priorities. The federal focus and interest is shifting, (e.g. to coastal issues). If this continues, the character of the national program will be fundamentally different. States in the country's interior, for example, could receive lesser priority -- with their federal tax dollars used elsewhere.

* The future role of federal, state and local governments in financing infrastructure and administration of the national program must be addressed. The level and form of that support is at issue, including:

  .. The need for funding to keep pace with the increase in federal mandates and the upgrading or rehabilitation of the nations' infrastructure.
  .. The federal role in supporting federal mandates.
  .. Reliance on the State Revolving Loan Fund vs. grant programs.
  .. The state vs. the Congressional/USEPA role in determining funding beneficiaries.
  .. Integration of the plethora of funding sources.

.. The need for state flexibility to assure effective use of limited funds.

* The priority of nonpoint source control. While nonpoint source control must become a greater priority, it must be accomplished without saddling states with twice the work and no more funding. Nonpoint sources must be addressed differently than municipal and industrial point sources. State and local governments need flexibility to take logical and technically sound approaches.

* State and local governments need latitude in designing and implementing programs. Greater flexibility is needed to actually achieve the results intended by Congress and the public. Such flexibility will necessarily modify the "command and control" philosophy underlying the Act.

* At the same time, in some areas a level of consistency is needed nation wide. Some current and frequently controversial issues have their genesis in a simple problem -- lack of clear USEPA/national policies. The result is "misunderstanding" of fundamental concepts, a lack of equity among dischargers and a significant backlog in permit resistance NPS plan completion.

* Governments must make better use of science. This, of course, requires a greater priority nationally and a commitment to accepting the results in the standards setting and pollution control arenas. Outmoded science, and issues of costs vs. benefits and risk assessment must be squarely addressed. In addition, adequate time for public discussion and scientific input must be provided in the development of program regulations.

* Coordination of standards setting, nonpoint source control, point source permitting and enforcement programs is essential. At the state and local levels, these programs cannot be dealt with separately. The national program must promote integration of a multitude of policies and activities.

* Building local capability to manage point and nonpoint sources is a priority. Municipalities will become, in many instances, the front line of water pollution control. Local governments must have access to the tools necessary to manage quality programs.

Funds too will need to be made available to the local governments through the State funding process.

Several themes emerge. Key among them is the need to focus on the original intent of the Clean Water Act, (e.g., technically valid standards leading to basin-wide solutions). To maintain and move forward with an effective Clean Water Act, certain principles must be advanced. Specifically, environmental managers must:

* Maintain high standards of program quality,
* Help assure economic development consistent with clean water goals,
* Identify options to enhance the national funding commitment,
* Assure Federal program compliance with clean water requirements, and
* Realign Federal priorities to focus on the most critical "client" needs. This could be accomplished using the Section 208 approach.
* Recognize technical assistance, public education and incentives as legitimate environmental approaches.
* Build broad-based alliances to cooperatively solve problems.
* Maintain state, local, and federal professional capabilities and encourage creatively through flexibility.

SUMMARY

In the past decades, the American people have invested billions of dollars in protecting and enhancing our nation's precious waters. Many more billions will be needed to assure pure fresh water for the generations to come and public opinion polls clearly indicate that the American people are determined to keep our water clean.

Reauthorization of the Clean Water Act will provide the backdrop for our national debate on how best to achieve and maintain clean water. It will also provide a forum for the necessary funding discussions. In addition to the issues outlined in this paper, other issues will undoubtedly emerge as the reauthorization process unfolds including the debate surrounding a federal vs. state managed program, the necessity of complex and burdensome legislative and regulatory requirements and the realistic role of national and state governments responsible for locally occurring pollution. ASIWPCA will be involved every step of the way to ensure that the voice of the states is heard loud and clear.

SUBMITTED BY CHRIS BRESCIA

MARC 2000

Midwest Area River Coalition 2000
200 North Broadway, Suite 1725
St. Louis, MO 63102-2716
Tel: (314) 436-7303

Fax: (314) 421-1155

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MIDWEST AREA RIVER COALITION 2000 (MARC 2000)

before the

INVESTIGATIONS AND OVERSIGHT SUBCOMMITTEE

OF THE

HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

Washington, D.C.
May 4, 1994

83-681 1575

Mr. Chairman and members of the Subcommittee, my name is Fred Schrodt. I am the Chairman of the Midwest Area River Coalition 2000 (MARC 2000) and Vice President of Farmland Industries, Inc. from Kansas City, MO. I am accompanied by Christopher J. Brescia, the President of MARC 2000. Our purpose for being here today is to provide testimony in support of a growing need for future waterway infrastructure investments in the Upper Mississippi River and Illinois Waterway (UMRS).

The best way to begin addressing these needs would be to spend some time introducing MARC 2000 to this Committee. MARC 2000 was formed about two years ago by a dozen major agricultural shippers and waterway carriers who do business in the UMRS. After careful consideration these leaders chose to create a new organization that would be fully committed to assuring that growing infrastructure needs of the UMRS would be addressed with careful consideration given to evolving environmental concerns. In a word, MARC 2000 is committed to a program of sustainable development where planning for economic growth can be assured while preserving our natural resource for the future.

My company Farmland, a $ 6 Billion agricultural cooperative in the Midwest is one of over 40 MARC 2000-member companies and organizations that generate over $100 Billion in economic activity from the Midwest and conservatively employ or self employ more than 147,000 in 20 states. Our ranks have recently been swelled by farmer producer groups from around the region who have joined with other economic interests concerned with the future of water resource development. We now represent a cross-section of our region's interests from Minnesota to Louisiana. We are farm cooperatives, grain producers, processors, shippers, terminal operators, towboat operators, construction companies, port authorities, to name a few of the principal areas of economic activity.

Our driving force is predicated on the fact that we have a transportation system in our region that has sustained economic growth for many decades. From the time the lock and dam system was put in place over 40 years ago, we have witnessed the strengthening of our agricultural and industrial base. Whether it's the corn or soybeans grown in Minnesota, South Dakota or Illinois or the coal mined in Kentucky or the fertilizer produced in Florida, a cost-efficient waterway system working in tandem with rail and truck feeder systems allows our part of the country to compete in world markets.

MARC 2000 was formed because of a growing concern that the river's navigation infrastructure is obsolete and our competitive edge is at risk. Mr. Chairman, my company alone purchases over $200 million of transportation services annually. I am here today before this committee because my company and I strongly believe that a modernized UMRS is critical to our ability to compete in

world markets. I might also add that the MARC 2000 membership includes many of our strong competitors. However, we join together with them, agricultural producers and the waterway carriers to promote waterway infrastructure modernization as a top regional and national priority.

Assessment of UMRS Needs

Our assessment of the infrastructure needs on the UMRS are based on two basic information sources. First, the experience of our members in moving products on the UMRS and secondly, based on the preliminary analysis provided by the U.S. Army Corps of Engineers on future needs.

An essential part of the UMRS as an economic, recreational and environmental resource, are the 40 lock and dam sites throughout the system. Not only do they play an important role in supporting navigation, they also have helped improve the quality of life for local communities by serving as an impetus for upgrading sewage disposal and municipal drinking water systems in towns and cities along the river, limited power generation and recreation.

Many of the locks throughout the system are aging and technologically obsolete. If waterway traffic continues to increase at a moderate rate, identifiable sections will exceed capacity by the year 2000. Without modernization, the UMRS faces certain efficiency deterioration that would have devastating consequences for the Midwest economy.

The aging system contributes to two important operational problems which impact on transportation costs. First, aged chambers operate relatively sluggishly as a result of wear in critical operating components and require more downtime for maintenance and repair. Consequently, older lock chambers impede the efficient movement of traffic through the system. An ambitious rehabilitation program is underway to address this critical area, but as much as $225 million additional investment may be needed over the next 10 years.

Secondly, the aged chambers are not typically designed to efficiently process large modern tows. While a typical tow on the UMRS is composed of 15 barges and a towboat measuring over 1100 feet in length, most aged lock chambers are only 600 feet long, thereby requiring inefficient double lockage to process a tow. This entails breaking the tow in half, moving each through separately, then re-joining the barges, only to repeat the process at the next lock. Unlike on the Ohio River, the UMRS has not added 1200 foot locks with the exception of the recently completed Mel Price facility in Alton, Illinois.

The problem of smaller locks is compounded by an increase in traffic along the UMRS. Long delays have become commonplace. In 1992, the last full year of traffic data, barge tows at five of the

Upper Mississippi River locks (L/D 20, 21, 22, 24, and 25) were delayed a total of 87,000 hours at a cost of $35 million. The problem is not expected to improve. Over the past seven years, barge traffic has grown an average of 2% per year. If moderate growth continues, delays at Locks 25, 24, 22 and others will increase significantly and capacity will be exceeded by the year 2000. These delays are projected to sap the economy of over $200 million annually.

In a reconnaissance study completed in September 1992, the U.S. Army Corps of Engineers provide a variety of options for addressing this potential problem. Preliminary benefit cost analyses demonstrate justification for adding 1200 foot locks to cut down on lockage time significantly by adding capacity. If the current feasibility study confirms this initial alternative as the most appropriate, we should expect construction needs from between $600M to $1B over the next 10 years.

It is hard to predict the needs over the next 50 years, but if the efficiency of the movement of bulk commodities on the UMRS continues and U.S. producers capture an increasing worldwide market share, the most recent reconnaissance study suggests that another $1B in capacity needs may be justified. However, it would be premature to project beyond the first 10-year period.

Concurrent with navigation capacity modernization may be the need to support enhanced ecosystem restoration construction projects through the Environmental Management Program (EMP) on the UMRS. We have insufficient information to formulate any program projections at this time. However, the completion of the navigation feasibility study, which includes considerable environmental impact analysis, should help identify if any ecosystem restoration is needed as a result of increased navigation impacts. In addition, current initiatives outside of the navigation study may also yield recommendations that should be factored into future authorization needs.

Funding Sources

Some consider the issue of funding sources as the most vexing. It has certainly been debated over the years. However, it has only become vexing since pressure has been placed on the federal budget. Ironically, the sound premise behind federal investment in the waterway system originally accepted by both Congress and the Executive branch remains sound today. Regrettably, in our attempt to find "dedicated sources" of funding, we have lost a clear understanding of how investments in the waterway system benefit the general public and nation as a whole.

Part of the problem is that we no longer use waterway transportation as a major form of people conveyance. The general public has shifted to more rapid forms of transportation, leaving

the waterways to move bulk commodities. However, the benefits derived to the general public are still very much present in our economic structure. In our part of the country, continued exports of grain contribute to our balance of trade, affecting the entire economy.

In this rush to place the funding responsibility on anyone else other than general revenues, we currently have in place a fuel tax on tow boat usage levied at 19 cents per gallon and expected to rise to 20 cents next January. This federal source of income collected from only one of the many beneficiaries of the system generates about $80 million per year. These trust fund monies are then used to help fund capital improvements on the waterway system.

MARC 2000 continues to oppose raising that rate until all users and beneficiaries contribute to the future needs of a system that assures consistent water supply for municipalities, access to port facilities, and recreational usage of the waterway system, to name a few. The value of full federal funding was that everyone who benefited supported the system. Placing the responsibility for future development on one user (navigation) is patently inequitable and counterproductive.

During last year's debate over the President's proposed $1/gallon fuel tax, many of our grain shippers immediately calculated that as much as 40 percent of the grain traffic would move off the river seeking alternative modes of transportation causing still higher costs. The U.S. Army Corps of Engineers estimates that the country receives a net savings of over $1 Billion dollars annually from the movement of cargo on the UMRS over the next available mode. Some proponents of the barge fuel tax proposal suggested that rail rates would not change with an increase in the barge rate and that the impact would be negligible. Our contention is quite the opposite. An increase in the barge fuel tax rate would at the very least reduce farmer producer incomes dramatically in our region. Grain accounts for over 70 percent of the products shipped from our region to world markets. Those markets are highly competitive with price elasticities requiring the farmer to absorb any increase in transportation costs. That is the bottom line to the economic relationship between taxes imposed on a service sector moving the products from production to end user.

It is clear that there are continuing challenges to modernize the inland waterway infrastructure in this country. We cannot afford to allow our current competitive advantage, one that permits us to compete in global markets from the furthest recesses of our country, to be neglected. Our contribution to this debate is the following:

First, it is critical that we recognize that we will lose market advantage if we do not find ways to keep transportation costs down or improve them even further.

Second, we must acknowledge as a nation that continued investment in the waterway system is a national benefit, one that finds its way into our economy in many different ways. We must end this misguided notion that we are subsidizing one element of our society at the expense of others.

Third, until we determine alternative means of shipping bulk commodities more cheaply, we need to use whatever collective resources we have to maintain the system as cost-effective. Our freight system within this country is the most efficient and productive in the world. Our agricultural system is equally as productive. We must not impair this productivity with a crumbling infrastructure.

Innovative Funding

Perhaps one of the most innovative ways to fund inland waterway infrastructure needs is to look carefully at the current process. A tradition strategic planning SWOT analysis may yield significant alternatives to using the funds we currently collect more efficiently.

What are the current Strengths and Weaknesses of the current system? Where are the Opportunities to reducing costs? What are the Threats to the existing infrastructure? Answers to these questions have already yielded significant accomplishments.

For example, in the UMRS, industry is working with the U.S. Army Corps of Engineers to evaluate various engineering principles and criteria that govern construction cost estimates. Perhaps having maximum efficiency in lock chamber fill-times is not worth the additional costs of construction? Original estimates of $350 million for each modernized locks on the UMRS may already have been reduced to $200 million. Additional savings are still under consideration.

One of the major obstacles to dedicated funding sources in the UMRS, especially with grain movements, is the inability to pass costs on through to the customer. A broad-based consumer averaging of costs that would impose minimal hardship is not part of the economic structure for these products as it may be for coal-based electricity consumption.

Economic Impact of Failure

Perhaps the best way to address your request for an assessment of the economic impact of failure to meet necessary inland waterway infrastructure needs is to focus on what we currently have and logically could possibly lose.

This past year, MARC 2000 retained the services of Price Waterhouse, a respected independent accounting and consulting firm,

to conduct an independent assessment of the impact the UMRS has on our region's economy. The results may not be startling to the members of this Subcommittee, but to many who have forgotten the regional and national economic benefits derived from water resource projects, the findings are dramatic.

This first level of analysis demonstrates that as many as 400,000 full or part-time jobs are somehow affected because we use the UMRS for commercial navigation. These jobs generate almost $4 Billion in individual income and produce anywhere from a conservative estimate of $11 Billion to a possible $14 Billion in revenue for our economy. Personal income tax receipts of over $700 million pays for a wide assortment of services at both the federal and local level, including fire and police protection, education and much more.

Mr. Chairman, I ask that the PW report be included in the hearing record in its entirety. We ask this because we wish all to have the opportunity to fully understand the analysis and the true impact water resource projects have on our nation.

Briefly, Mr. Chairman, this report identifies four categories of "beneficiaries" to waterborne bulk commodity movements. They include a core sector, supplier sector, waterway-related sector and an expenditure induced sector.

The core sector includes economic entities that directly provide the components necessary for transporting cargo on the UMRS and its tributaries, such as towboats and barges, port facilities and services, marine cargo and freight transportation. This sector accounts for almost **100,000 full and part-time jobs** or 35,906 full-time equivalents (FTEs).

The supplier sector are those that produce and supply the inputs used by the core sector of the inland waterway transportation industry, including trucking and transportation services, oil refinery industry and the pipeline industry. This sector accounts for almost **18,000 full and part-time jobs** or 6,124 FTEs

The waterway-related sector are those industries that rely on various sources of transportation to carry their inputs and outputs to other industries for use as inputs or to fulfill consumer demand. These include farming, mining and the fertilizer industries. This sector accounts for over **50,000 full and part-time jobs** or 19,206 FTEs.

The expenditure induced sector reflects the jobs and expenditures generated throughout the economy as a result of the previous three groups spending their income. This income is spent on goods and services within their home communities and throughout the region. During each round of spending, the money is paid out as wages to more employees and then spent again. This process is known as the

"multiplier" or "ripple" effect. This sector accounts for **275,000 full and part-time jobs** or 91,856 FTEs.

The greatest economic impact of cargo shipped on the waterway system is derived by the general public or expenditure induced sector. This sector is represented by the local consumer retail and wholesale industries, service providers, recreational organizations, tourist attractions, and every conceivable "main street USA" entity.

These data remind us that failure of the system has a ripple effect through the economy. Economists may point to the fact that failure of the waterway system may not translate into loss of all these jobs. But, our most recent economic recession reinforced that when one link in the economic chain fails, the rest suffer in sequence.

Another measure of economic impact is the net transportation savings alluded to earlier in the testimony. The lower the cost of transporting goods to the world or domestic consumer, the more income remains in the region. Based on the volume of tonnage shipped and received into each state, the U.S. Army Corps of Engineers has estimated that the five state region of the UMRS save over $500 million in transportation savings over the next best cost method of shipment. If we chose not to maintain the waterway system as a viable navigation corridor, we lose those savings. Loss of those savings is equal to loss of wealth to our economy.

For example, industries in the state of Illinois would incur increased transportation costs of over $334 million annually, using the next cost alternative. Over the next 50 years, this annual loss would equate to a total loss of current wealth in the state of Illinois of over $8.6 billion. In essence, to replace that lost savings, the state of Illinois would have to find $8.6 Billion to invest at a 3 percent return to maintain the status quo.

Corresponding savings for the other four states in the region are as follows:

- Missouri and Minnesota would each incur a $2.2 Billion reduction in current wealth with $94 million and $85 million respectively of increased transportation costs;

- Iowa would incur a $1.6 Billion reduction in current wealth with $63 million of increased transportation costs; and

- Wisconsin would experience a $320 million reduction in current wealth with a $12 million increase in transportation costs.

These data are only a portion of the picture. As a purchaser of transportation services, I can assure you that without water-compelled transportation rates, Farmland and other purchasers of transportation services would be paying considerably more for

movement of product via other modes. In fact this economic impact analysis remains to be completed. However, I would submit to you that the impact of losing a competitive waterway system counterbalance would far eclipse these data for the region and country as a whole.

The reality is that everyone in our economy feels some effect from higher transportation costs reflected in inflation levels and interest rate calculations. It is for this reason, among others, that all waterway projects must meet a positive national benefit to cost ratio.

A final consideration of not investing in a modernization agenda on the UMRS is an environmental cost. For example, in 1991, the Minnesota Department of Transportation analyzed the relative safety to life, property and the environment of river transportation in comparison to the other major transportation modes. As a basis for the analysis, four regularly scheduled vessel movements were assumed diverted to the highway and rail modes. In the latter comparison, the shift from barge to rail resulted in an increase in fuel consumption of 250%, exhaust emissions increases of 480%, a 150% increase in probably accidents, and an additional 75-100 car unit trains at highway crossings and 38 at 177 road crossings. Although a shift to highway for long hauls would likely not occur frequently, the environmental impact was even more dramatic.

Impact of 1986 Water Resources Development Act

Clearly, WRDA '86 was instrumental in finding a solution to completion of the second lock at Melvin Price Locks and Dam and increasing the funding available through a 50/50 cost share formula that opened the way for modernization and rehabilitation projects on the UMRS. However, in finding that solution we have retreated from the acknowledgement that the majority of benefits accrue to the nation in the form of transportation savings, inflation retardation, balance of trade benefits to name a few. In response, alternative funding sources have now focused on how further to burden the transportation service industry under the guise of cost recovery.

WRDA '86 also provided for the creation of an Inland Waterway Users advisory board to the Corps of Engineers. This group has provided private sector opinions on priorities to accompany the private contributions of funds into the capital improvement program.

Conclusion

Mr. Chairman and members of the Subcommittee, we have an inland waterway system that other nations admire. We still hear stories of grain harvests rotting in the former Soviet Union because of their inability to move product to market. The Midwestern inland waterway system is at the opposite end of the spectrum. We have developed in the Upper Mississippi Basin an inter-modal system of

truck and feeder systems working in complement to the long-haul water routes. Yet, we stand to lose our advantage if we don't modernize.

Notwithstanding a potential erosion of the existing global market share for Midwestern grain and domestic consumption of raw materials, the passage of the North American Free Trade Agreement (NAFTA) and the impending changes under the General Agreement on Tariffs and Trade (GATT) project a growing opportunity for agriculture in the Upper Midwest. Among other things, GATT will require nations to reduce or eliminate tariffs on many agricultural products and reduce domestic and export subsidies. These actions promise to expand U.S. access to foreign markets and boost agricultural export opportunities. Many economists are predicting a $4 to $5 billion increase in U.S. farm exports over the six-year implementation period under GATT. We must be ready to participate.

The potential benefits for agriculture under NAFTA is further reason for optimism in the Upper Midwest. Once fully in effect, U.S. export grains are projected to increase to 6 million tons, only 60 percent of which could be realized without NAFTA, according to the U.S. Department of Agriculture. The U.S. International Trade Commission estimates that corn exports could quadruple as a result of the trade agreement.

Other developments are reorganizing markets and trading patterns throughout the world. The U.S. Feed Grains Council forecasts the world economy will see overall expansion in the decade to come boosted significantly by a more open world marketplace. Asia, for example, is experiencing a huge economic boom, with China moving quickly towards a market economy. The economic outlook is also brightening in Latin America and Eastern European nations that are converting to market economies.

Moreover, feeding the world's growing population will provide further opportunities for Midwestern farmers. Between 1980 and 1991, world population rose 21% from 4.4 billion to 5.4 billion and by the year 2000, another 15% will be added for a total of nearly 6.2 billion.

All these developments do not ensure prosperity for the Midwestern economy. American grain producers will have more export opportunities, but also face more competition from emerging markets. If the U.S. hopes to be successful in this increasingly competitive world marketplace, modernization of the UMRS must become a national priority. Opening the waterways would help Midwestern producers boost export activity, which would create more jobs, which in turn would create positive ripple effects throughout local communities in the Midwest.

MARC 2000 urges this committee and the Congress to continue the pivotal role and leadership it has provided in the past to ensuring our nation's waterway infrastructure needs are addressed in the future.

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THE ECONOMIC ACTIVITY ASSOCIATED WITH THE COMMERCIAL UTILIZATION AND MAINTENANCE OF THE UPPER MISSISSIPPI RIVER-ILLINOIS WATERWAY

April 1994

THE ECONOMIC ACTIVITY ASSOCIATED WITH THE COMMERCIAL UTILIZATION AND MAINTENANCE OF THE UPPER MISSISSIPPI RIVER-ILLINOIS WATERWAY

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EXECUTIVE SUMMARY

A. Background

Commercial use of the inland waterway transportation system began as early as 1811 and gave farmers in the interior of the United States efficient transportation for their crops downriver to New Orleans for domestic and international shipping. The waterway system also facilitated the transportation of manufactured goods into the interior of the country.[1] In modern times, the Upper Mississippi River-Illinois Waterway system serves as a gateway through which many U.S. agricultural and industrial products pass before they are distributed nationally and internationally. The five states that border the Upper Mississippi River-Illinois Waterway system are:

- Illinois
- Iowa
- Minnesota
- Missouri
- Wisconsin

The Upper Mississippi River and its tributaries comprise the waterway system north of St. Louis, including the upper Mississippi and Illinois Rivers. Much of this system would be unnavigable if it were not for a network of 35 locks and dams constructed and maintained since the 1930s by the U.S. Army Corps of Engineers.

The waterway transportation industry provides a wide range of services to U.S. farmers and manufacturers while maintaining linkages with numerous industries. In addition to efficient bulk cargo transport, the industry includes a network of businesses to properly store, load, unload, and, where necessary, carry cargo by land-based modes of transportation such as rail and truck.

[1] James, Mark and Walton, Gary. 1972. "Steamboats and the Great Productivity Surge in River Transportation," *Journal of Economic History*, vol. XXXII, no. 3.

B. Purpose of this Study

The purpose of this study is to estimate the contribution of the waterway transportation system to the economies that directly benefited from the existence and maintenance of the Upper Mississippi River-Illinois Waterway system in 1992.[2] We measured the contribution at the state level for each of the five states on the Upper Mississippi and the five states below the lock and dam system. The latter states are Arkansas, Kentucky, Louisiana, Mississippi, and Tennessee. The main objectives of this study are to:

- Estimate total employment and compensation attributable to waterway transportation on the Mississippi River-Illinois Waterway system (Core Sector). Examples of industries included in this sector are: tow and tug; ferries; and marinas.

- Estimate employment and compensation associated with the business activities of industries that supply inputs to the Mississippi-Illinois system (Supplier Sector). This sector includes: boat manufacturers, fuel suppliers, and machinery and equipment facilities.

- Estimate the employment and compensation attributable to the industries that rely on the inland waterway transportation industry as a source of transportation for their outputs (Waterway-Related Sector). This sector includes: agricultural producers; coal producers; and chemical/fertilizer manufacturers.

- Estimate the range of additional employment and expenditures that may be generated throughout the economy as a result of the expenditures by the inland waterway transportation industry, its suppliers, and the waterway-related sector (Expenditure-Induced economic activity). Expenditure-induced effects may touch nearly every major industry in the United States, but are more heavily concentrated in retail consumer industries and capital goods sectors.

[2] In the cases where our data corresponded to periods other than the 1992 calendar year, we adjusted price levels, and similar factors to represent anticipated 1992 levels.

C. Study Results

Based on the results of our analysis, we estimated the total economic contribution, in terms of full-time equivalent jobs, compensation, and revenues attributable to the waterway system. We estimated that the revenue directly created by the industry supports approximately 61 thousand full-time equivalent jobs. As many as 92 thousand additional FTEs may be associated indirectly with the expenditures of the waterways industries ("expenditure-induced effects") for a total of 153 thousand FTEs associated with the industry. The estimated employee compensation attributable to the FTEs directly associated with the waterways industry totals $1.6 billion per year. When the estimated expenditure-induced contributions are added, total compensation associated directly and indirectly with the waterways industry in the ten states may be as high as $4 billion per year.

Due to the seasonal nature of many waterways industries, the actual number of jobs associated with the industry may significantly exceed the number of full-time equivalents estimated here. That is, the number of individuals who obtain some part of their incomes from the waterways industries (through part-time and seasonal work) could be two or even three times the number of FTE's.[3] As a consequence, we believe that these FTE figures represent a conservative estimate of the jobs associated with the waterway economy.

We summarize our results in Table ES-1.

[3] An important component of waterway industry employee is the agricultural sector. The 1987 Census indicates that nationally, 46% of the agricultural workers in the United States are part-time employees. In Missouri, one of the five states on the Upper Mississippi River-Illinois Waterway, 50% of the agricultural workers were part time. (Data from the Department of Agriculture, State of Missouri)

Table ES-1

Total Economic Activity Attributable to the Inland Waterway Transportation Industry			
Sector	Employment (FTE's)	Compensation (thousands)	Revenue (thousands)
Core Sector	35,906	$881,071	$4,185,849
Supplier Sector	6,124	$163,266	$1,157,425
Waterway-Related	19,206	$485,882	$5,796,943
Direct Contribution Subtotal	**61,236**	**$1,530,219**	**$11,140,217**
Expenditure-Induced	91,856	$2,295,328	
Total	**153,092**	**$3,825,547**	*

* There is an unavoidable element of uncertainty associated with attempts to quantify expenditure induced effects, particularly their associated revenues. At one extreme, if the expenditure-induced effects are captured largely by states that are not on the waterway and the local economy fully employs its labor, capital, and raw materials, the net change in local economic activity might be small. At the other extreme, empirical estimates based on input-output analysis suggest that if expenditure-induced effects do exist and are fully captured locally, the ripple effects of a dollar of direct compensation in the waterway sector may be as much as $1.50.

In Table ES-2 below, we summarize our estimates of the individual Federal, state and local income tax payments and Federal corporate tax payments associated with employment in the waterway transportation system for the ten states that border the Mississippi River.[4] The dollar estimates for taxes payable are based on average tax rates (taxes paid divided by a measure of income -- adjusted gross income, or personal income) for the populations of these states for single filers.[5] To the extent that the average incomes of Waterway industry

[4] U.S. Bureau of the Census, *Statistical Abstract of the United States: 1993* (112th edition.) Washington, DC 1993, page 341.

[5] *Facts and Figures on Government Finance*. 1992. The Tax Foundation, pages 244 and 216.

workers differ from state averages, or payments differ due to differences in filing statuses, actual payments will differ from the estimates presented here.

Table ES-2

Estimated Personal and Corporate Income Taxes Associated with Employment and Business Revenues in the Inland Waterway System				
Sector	Federal Individual Income Taxes ($ millions)	State & Local Individual Income Taxes ($ millions)	Total Individual Income Taxes ($ millions)	Federal Corporate Income Taxes ($ millions)
Core Sector	$119.3	$15.8	$135.0	$37.7
Supplier Sector	$22.1	$2.9	$25.0	$15.1
Waterway-Related	$65.8	$8.7	$74.5	$113.8
Direct Contribution Subtotal	**$207.2**	**$27.4**	**$234.5**	**$166.6**
Expenditure-Induced	$310.7	$41.1	$351.8	*
Total	**$517.9**	**$68.5**	**$586.3**	

* The approximate nature of corporate tax estimates based on industry revenue figures, coupled with the uncertainties associated with expenditure-induced revenue estimates themselves precludes estimation of federal corporate tax receipts for this sector.

Estimated personal income tax payments by employees of the core sector of the Waterway industries total $234.5 million, of which estimated payments to federal income taxes total $207.1 million, and state income taxes, $27.4 million. Assuming that the

expenditure-induced multiplier effects exist in full measure and accrue entirely to the Waterway states, total personal income taxes paid by the employees associated directly and indirectly with the Waterway industry may be as high as $586.3 million for 1992.

Our associated corporate income tax payments estimates are based on our revenue estimates by four-digit SIC code industries and on Federal government statistics on tax payments and business revenues.[6] Actual tax payments depend on complex formulas that are based on corporate profits and other factors. The rates used here apply only to incorporated businesses. To the extent that some of the businesses represented in the revenue estimates in Table ES-1 are unincorporated, tax revenues will differ. Because tax rates, profit rates and other determinants of actual tax payments will vary across industries and time, the estimates above are intended only to be suggestive of the magnitude of probable tax payments. We did not estimate for the purposes of this analysis, payments of sales taxes or other taxes.

D. Study Approach

To measure the total economic contribution of the system on these economies, we estimated full-time equivalent employment,[7] compensation, and revenues attributable to economic activity generated by the Upper Mississippi River-Illinois Waterway system. We then analyzed how each of these contributions is linked to the number of tons of cargo transported on the rivers.

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[6] Tax payments as a fraction of business receipts are based on data in Statistics of Income Division, Internal Revenue Service, Department of the Treasury, *Corporation Source Book of Statistics of Income, 1990, Active Corporation Income Tax Returns, July 1990-June 1991*, Washington DC Government Printing Office. For some industries, we used rates provided by: Office of Management and Budget, *Circular A-76, Performance of Commercial Activities*, Washington DC, September 28, 1990.

[7] Full-time equivalent employment consists of full-time hours worked annually by an employee or employees. Full-time equivalent employees work 1,740 hours in the agricultural sector and 2,000 full-time hours in all other industries. For example, three seasonal agricultural employees who work an average of 580 hours each per year would count as one full-time equivalent employee for our analysis. Our full-time equivalent estimates *do not* count the number of individuals who work in a particular industry or occupation. If much of the work were part-time or seasonal, the actual number of workers might be considerably higher than the number of FTEs indicated here.

To collect revenue data from the inland waterway transportation system, we developed two survey instruments to gather primary financial data directly from companies in the inland waterway transportation industry. We also collected data from relevant government agencies, including the U.S. Army Corps of Engineers, the U.S. Department of Commerce, the Maritime Administration (MARAD), the Department of Agriculture, and the Department of Labor.

From the data and information collected, we estimated the full-time equivalent employment, compensation, and revenues generated by the Core, Supplier, Waterway-Related, and Expenditure-Induced Sectors of the Upper Mississippi-Illinois system in 1992.

The Core Sector represents the main components of the inland waterway transportation industry. We estimated the total Core Sector contribution by state, basing our estimates on data collected from members of the inland waterway transportation industry. The economic contribution of the Core Sector was estimated as the sum of the number of full-time equivalent jobs associated with the waterway system in each state. We estimated the total compensation generated by these jobs by multiplying the average compensation per FTE employee in each state and industry by the estimated total FTE jobs attributable to the waterway system. Revenues were calculated by multiplying the amount of revenue supported per full-time equivalent job by the number of FTE jobs attributable to the industry.

We based our estimates of inland Waterway-related employment and compensation in the Supplier Sector on Price Waterhouse's survey of expenditures by members of the waterway transportation industry. We estimated Supplier Sector employment as a function of the proportion of purchases by the Core Sector, which in turn is assumed to be a function of tons of cargo shipped in the Core Sector.

We applied the average expenditures on supplies reported by survey respondents in the Supplier Sector industries, weighted by tons shipped by Core Sector to derive the

Supplier Sector revenues attributable to interactions with the Core Sector. We then divided this revenue by the level of revenues per FTE worker, to arrive at the number of workers associated with those revenues. We multiplied these estimated numbers of Supplier Sector FTE workers by the individual Supplier Sector FTE average compensation, to arrive at an estimate of the total Supplier Sector compensation related to interactions with the Core Sector.

Estimates for FTE employment related to expenditure-induced economic activity were based on state level multipliers. These multipliers represent the ratio of Core and Supplier Sector employees to expenditure-induced employees, by state. Compensation estimates were based on average annual pay by industry and state for 1992.

I. INTRODUCTION

A. Background

Commercial use of the inland waterway system began as early as 1811 and gave farmers in the interior of the United States efficient transportation for their crops downriver to New Orleans for domestic and international shipping. The waterway system also allowed raw materials and manufactured goods to be brought into the interior of the country.[1] In modern times, the Upper Mississippi River-Illinois Waterway system serves as a gateway through which many U.S. agricultural and industrial products pass before they are distributed nationally and internationally. The ten states that border the system are:

- Arkansas
- Illinois
- Iowa
- Kentucky
- Louisiana
- Minnesota
- Mississippi
- Missouri
- Tennessee
- Wisconsin

Exhibit I-1 presents a regional map of the Mississippi River and its tributaries. The Upper Mississippi River and its tributaries comprise the waterway system north of St. Louis, including the Mississippi and Illinois Rivers. Much of this system would be unnavigable if it were not for a network of 35 locks and dams constructed and maintained since the 1930s by the U.S. Army Corps of Engineers.

The inland waterway transportation industry provides a wide range of services to U.S. farmers and manufacturers, maintaining linkages with numerous industries. In addition to efficient bulk cargo transport, the industry includes an intricate network of businesses to

[1] James, Mark and Walton, Gary. 1972. "Steamboats and the Great Productivity Surge in River Transportation," *Journal of Economic History*, vol. XXXII, no. 3.

Exhibit I-1

Mississippi River and Its Tributaries

properly store, load, unload, and, where necessary, carry cargo by land-based modes of transportation such as rail or truck.

B. Purpose of this Study

The purpose of this study is to estimate the contribution of the waterway transportation industry to the communities that benefit from the existence and maintenance of the Upper Mississippi River-Illinois Waterway system. We will measure the contribution at the state level for each of the five states in the Upper Mississippi region. The five states are Illinois, Iowa, Minnesota, Missouri, and Wisconsin. In addition, we will consider the economic contribution to each of the five states below the lock and dam system. These states include Arkansas, Kentucky, Louisiana, Mississippi, and Tennessee. The four main sectors for analysis in this study are:

- *Core Sector* - Estimates total employment and compensation attributable to waterway transportation on the Upper Mississippi River-Illinois Waterway system. Examples of industries included in this sector are: tow and tug; ferries; and other services related to the transportation of waterway cargo.

- *Supplier Sector* - Estimates employment and compensation associated with the business activities of industries that supply inputs to the Upper Mississippi-Illinois system. Examples of industries included in this sector are: boat manufacturers, fuel suppliers, and machinery and equipment facilities.

- *Waterway-Related Sector* - Estimates the employment and compensation attributable to the industries that rely on the inland waterway transportation industry as a source of transportation for their outputs. Examples of industries included in this sector are: agricultural producers; coal producers; and chemical/fertilizer manufacturers.

- *Expenditure-Induced Economic Activity* - Estimates the range of additional employment and expenditures that may be generated throughout the economy as a result of the expenditures by the inland waterway transportation industry, its suppliers, and the waterway-related sector. The expenditure-induced economic activities associated with the waterway may ripple through nearly

every major industry in the United States, but is likely to be more heavily concentrated in the retail industry.

C. Organization of this Report

The remainder of this report is organized into the following sections:

- *Section II: Study Approach and Method* - We discuss the key terms used to describe the economic contribution of an industry as well as our method to estimate the economic impact of the Upper Mississippi River-Illinois Waterway system.
- *Section III: Economic Contribution of the Waterway Transportation System* - We discuss the economic activity generated by the existence of the Upper Mississippi River-Illinois Waterway system in terms of estimated employment, compensation, revenue, and personal income tax receipts.

II. STUDY APPROACH AND METHOD

In this section, we present our approach to the study and method for estimating the economic contribution of the waterway transportation system to the Upper Mississippi River-Illinois Waterway. Our discussion is organized as follows:

- *Definition of Key Terms* — We provide a glossary of terms used to estimate the contribution of the inland waterway transportation system.
- *Description of Industry Contributions* — We provide definitions of the impacts that the inland waterway transportation system generates.
- *Study Method* — We provide a discussion of our data collection and economic impact analysis method.

A. Definition of Key Terms

Key terms used in this study are defined by the Bureau of Labor Statistics as follows:[1]

- *Employed Persons* — "include (1) all civilians who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons."
- *Total Compensation* — includes "wages, salaries, and the employer's costs for employee benefits."
- *Wages and Salaries* — "consist of earnings before payroll deductions, including production bonuses, incentive earnings, commissions, and cost-of-living adjustments."

[1]Definitions are taken from "Notes on Current Labor Statistics," *Monthly Labor Review*, January 1989, pp. 76-8.

- *Benefits* — "include the cost to employers for paid leave, supplemental pay (including non-production bonuses), insurance, retirement and savings plans, and legally required benefits (such as Social Security, workers' compensation, and unemployment insurance)."

In this report, employment is reported in terms of full-time equivalent (FTE) jobs. For all industrial sectors except agriculture, an FTE job is measured as 2,000 hours per year. To remain consistent with the average annual work hours per agricultural employee, an agricultural FTE job represents 1,740 hours of work per year. Three seasonal agricultural employees, for example, who work an average of 580 hours each per year would count as one FTE for this study.

FTE estimates in this report *do not* count the number of individuals who work in a particular industry or occupation. If much of the work done by employees in a particular occupation included in this analysis were part-time or seasonal, the actual number of workers might be considerably higher than the number of FTEs indicated here.

B. Description of Industry Contributions

Our analysis focuses on two types of economic contribution attributable to the Upper Mississippi River-Illinois Waterway. These two major types of economic contributions are:

- Direct Contribution
- Expenditure-Induced Contribution

Below, we discuss these contributions of the inland waterway transportation system.

1. Direct Contribution

The direct contribution of the industry is defined as the economic activity associated with direct expenditures of members of the Core, Supplier, and Waterway Related Sectors of

the waterway industry on supplies and services, as well as the FTE employment, payroll, and revenues generated by the industry in the ten states along the Mississippi River and its tributaries. The direct contribution comprises the impact of the following three sectors:

- *Core Sector* — Economic entities that directly provide the components necessary for transporting cargo on the Mississippi River and its tributaries
- *Supplier Sector* — Economic entities that produce and supply the inputs used by the core sector of the inland waterway transportation industry
- *Waterway-Related Sector* — Economic entities that rely on the core sector for low-cost transportation that can be provided most efficiently by the waterway system

a. Core Sector

The direct effects of the inland waterway system are defined as the employment, compensation, and revenues generated by business operations that are directly supported by the existence of the system. The Core Sector represents the main components of the inland waterway transportation system. These components are:

- Barges and towboats
- Port facilities and services
- Marine cargo and freight transportation

Each industry represents an important step in the transportation of freight on the Mississippi River and its tributaries.

b. Supplier Sector

A wide range of industries provide the necessary inputs for the Core Sector's operation. The industries that supply these inputs and support the Core Sector are referred to as the "Supplier Sector." The Supplier Sector is partially supported by the economic benefits

created by the Core Sector expenditures on goods and services supplied by other industries. Through the Supplier Sector industries, the inland waterway transportation system produces an economic impact on many other major industries in the United States. In Exhibit II-1, we outline examples of interindustry linkages between members of the Core Sector and Supplier Sectors of the inland waterway system.

For our analysis of the Supplier Sector, we estimate employment, compensation, and revenues resulting from interindustry linkages to the inland waterway transportation system. For example, fuel suppliers to the Core Sector in port cities receive direct payments from vessels for providing transportation fuel. In turn, the fuel suppliers depend on a network of suppliers who are responsible for processing and transporting the fuel to the ports. This network includes:

- Trucking and transportation services
- Oil refinery industry
- Pipeline industry

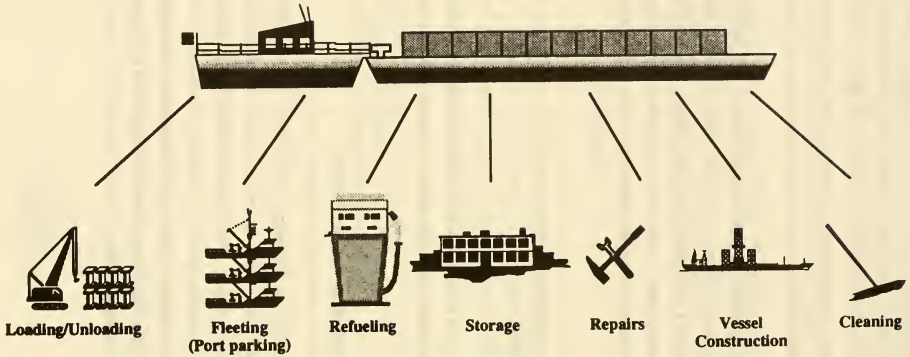
These suppliers provide goods and services that are necessary for the Core Sector's operations. As a result, employment and compensation are created within the Supplier Sector.

c. Waterway-Related Sector

Many industries located near the Mississippi River and its tributaries rely on various sources of transportation to carry their inputs and outputs to other industries for use as inputs, or to fulfil consumer final demand. The Waterway-Related Sector comprises industries that rely on the transportation industry. Examples of these industries are the farming, mining, and fertilizer industries, which require inexpensive transportation that can be efficiently provided by the waterway system. Exhibit II-2 provides an overview of the transportation linkages with waterborne activity.

Exhibit II-1

Port Services Required by Waterway Transporters



Overview of Transportation Linkages with Waterborne Activity

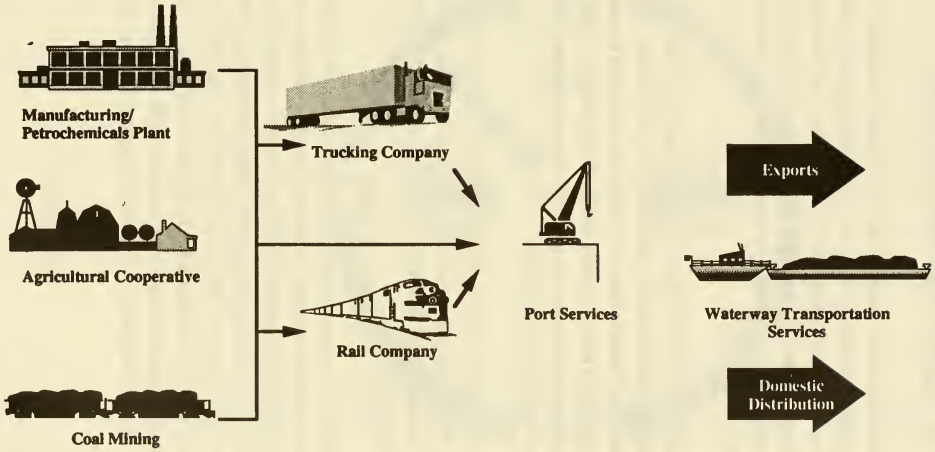


Exhibit II-2

2. Expenditure-Induced Economic Activity

The expenditure-induced economic activity of an industry summarizes the induced jobs and expenditures generated throughout the economy as a result of the expenditures by the businesses and employees of the industry's Core, Supplier, and Waterway-Related Sectors. Beginning with the Core Sector and spreading through the related industries, the economic effects generated by the inland waterway filter through the economy in the form of employee wages and spending.

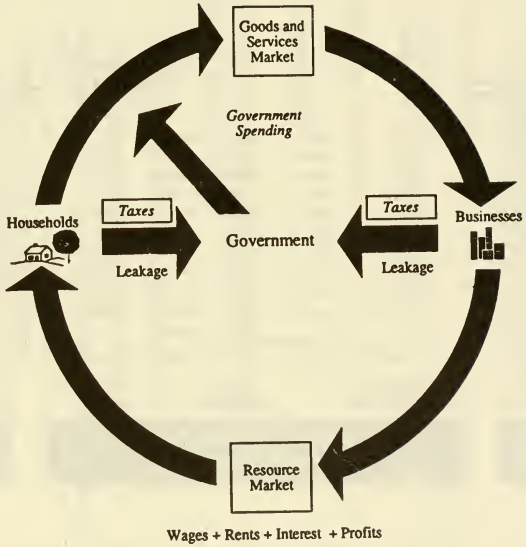
In Exhibit II-3, we illustrate the circular flow of income that might occur through expenditure-induced economic activity. Employees of the Core, Supplier, and Waterway Related sectors are paid wages and salaries. These employees spend a substantial portion of their wages on goods and services. During each round of spending, the money is paid out as wages to more employees and then spent again. This process of spending and re-spending is known as the "multiplier" or "ripple" effect.

In this circular flow of income, leakages may occur, such as through taxes, savings, and imports. With each successive round through the economy, the income flow decreases. The total of these income flows represents the induced contribution of the initial round of spending to the economy.

In Exhibit II-4, we present an example of a flow of income that produces a total impact 2.5 times the initial contribution, referred to as having a multiplier of 2.5. In the first round of spending, $100 circulates through the economy. In the second round, $40 "leaks" out of the flow, to such expenses as taxes, savings, and imports, and $60 continues to circulate through the economy. This process continues, with spending in each round decreasing by 40 percent. In this example, when all rounds of spending are assumed, the total contribution of the initial spending to the economy is $250, or 2.5 times the initial $100 expenditure. The total contribution of the industry is calculated by adding the direct

Exhibit II-3

Expenditure Induced Impact of the Inland Waterway Transportation Industry: The Circular Flow of Income



Example of the Multiplier Effect

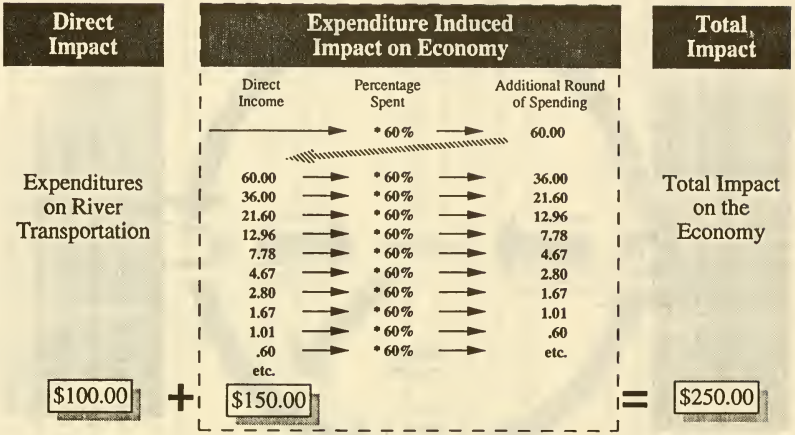


Exhibit II-4

contribution of the Core, Supplier, and Waterway-Related Sectors to expenditure-induced economic activity.

C. Study Approach and Method

Our approach has two main phases:

- Data Collection
- Economic Contribution Analysis

Below, we describe each of these phases.

1. Data Collection

Our data collection efforts used primary and secondary sources to explore a variety of facets of Mississippi Waterway Commerce:

- Waterway transportation industry operating expenditures
- Employment and compensation in the industry and its suppliers
- Linkages between the waterway transportation industry and its services and suppliers
- Navigational facilities along the inland waterways

We used two types of data sources to examine the above relationships within the inland waterway system:

- Primary data
- Secondary data

We describe these two types of data sources below.

a. Primary Data Sources

Primary data are data provided first-hand by an institution or entity that is the subject of this study. For example, to collect primary expenditure data from the inland waterway transportation system, we developed a survey instrument to collect the data directly from companies in the inland waterway transportation industry. The data collection instruments that we created and used to compile primary financial data concerning the industry included:

- *Data Collection Form* - We collected all relevant expenditure data for the companies that participated in the study.
- *Background Questionnaire* - We surveyed participating companies to determine industry history and their specific type of business.

The surveys were conducted between April and June 1993. Participants were selected from the membership lists of the Midwest Area River Coalition (MARC 2000). These members represent a cross-section of the waterway transportation industry, including barge and tow operators, agricultural cooperatives, contractors, and vessel servicers and contractors based in ports along the Mississippi River and its tributaries. The majority of the survey participants were from the upper Mississippi region; however, approximately 10 percent of the data collected represented operations from ports along the lower Mississippi River area.

The advantage of using primary data for our analysis was that it enabled us to collect detailed expenditure data from a sample of members of the inland waterway system which we otherwise would not have been able to obtain from published sources in the public domain. However, since we surveyed only a small sample of members of the industry, we made assumptions based on our survey to estimate the overall economic contribution of the waterway transportation industry to the economies in the states bordering the Mississippi River.

b. Secondary Data Sources

Secondary data are data originating with agencies and entities that are not themselves subjects of this study, such as a government agency, that has already collected data from a primary source and made it available to the public. We collected data from the following secondary sources:

- U.S. Army Corps of Engineers - *Mississippi River, Gulf Coast, and Antilles (MV - GC) Region Freight Traffic Tables CY - 1990*, Navigation Data Center, Waterborne Commerce Statistics Center, November 1992
- U.S. Department of Commerce, Bureau of the Census - *Annual Survey of Manufacturers: Statistics for Industry Groups and Industries; County Business Patterns 1990; Censuses of Agriculture, Construction, Retail Trade, Service Industries, Transportation, and Wholesale Trade, 1987*, U.S. Government Printing Office
- U.S. Department of Labor, Bureau of Labor Statistics - *Input/Output Accounts of the National Economy*, U.S. Government Printing Office
- U.S. Department of Labor, Bureau of Labor Statistics - *Employment and Wages Annual Averages, 1991*, U.S. Government Printing Office, January 1993
- U.S. Department of Agriculture - *Agricultural Statistics 1987 and 1992*, U.S. Government Printing Office
- U.S. Department of Transportation, Maritime Administration (MARAD) - various port industry analyses

3. Economic Contribution Analysis

From the data and information collected, we estimated the employment, compensation, and revenues generated by the Core, Supplier, Waterway-Related, and

expenditure-induced economic activity of the inland waterway transportation system in 1992. We summarize the method according to the segments of the analysis:

- Core Sector
- Supplier Sector
- Waterway-Related Sector
- Expenditure-Induced Economic Activity

Below, we provide an explanation of these four segments of the economic contribution analysis.

a. Core Sector

The Core Sector represents the main components of the inland waterway industry. The Core Sector contribution is estimated by state and is based on the number of tons shipped annually by the inland waterway transportation system. The economic contribution of the Core Sector is the sum of the number of jobs associated with the inland waterway transportation system. We estimated the total compensation generated by these jobs by multiplying the average compensation per employee in each state and industry by the total jobs attributable to the inland waterway transportation system. We estimated the total revenue by multiplying the amount of revenue supported per FTE job by the number of jobs attributable to the system.

b. Supplier Sector

Estimates for employment, compensation and revenue in the Supplier Sector are based on the primary data collected by Price Waterhouse in our survey of expenditure data from members of the inland waterway transportation system. Our estimation technique used:

- survey data on Core Sector companies' state level expenditures on goods and services by industry
- total employment, compensation and revenue by Supplier industry by state
- industry level data on Core Sector firm revenues by state

We identified Core Sector expenditures by state and industry for supplier goods and services from our survey data. We applied the survey proportions for Core Sector expenditures to the total expenditures of Core Sector firms in each state to estimate Core Sector spending by supplier industry. We compared these estimates of waterway system related revenues of supplier industries by state to total revenues for the supplier industries and estimated the share of supplier industry revenues associated with the waterway system.

To estimate Supplier Sector employment associated with the waterway system, we applied the revenues share to total supplier industry employment by state. Revenues per FTE employee in the Supplier Sector of the inland waterway transportation industry were relatively high in 1992 compared to those in the waterway transportation industry. For example, on average, one worker in the Core Sector of the waterway transportation industry generates approximately $117,000 in revenue. In contrast, $800,000 in revenue is generated per employee in the crude petroleum and natural gas industry, which is a part of the Supplier Sector of the inland waterway system.

The number of Supplier Sector workers supported by the Core Sector was then multiplied by the individual Supplier Sector average compensation across industries, to arrive at the total Supplier Sector compensation attributable to the existence of the Core Sector.

c. Waterway-Related Sector

Our estimates for employment and compensation in the Waterway-Related sector are based mainly on secondary government sources. Our technique used:

- state level tonnage figures for production by industry
- state level tonnage figures for waterway transportation by industry output
- state level figures for FTE employment by industry

For each state-level industry, for example the agricultural, petrochemicals and coal industries, we assumed that Waterway-Related Sector employment associated with that industry is proportional to the ratio of total tons of that industrial product transported on the waterway system from that particular state to the total tonnage produced by the state industry. Additional adjustments to our techniques were necessary for the cases where states acted as transportation centers for products of non-waterway states.

We derived compensation associated with those FTE's and Sector revenues in a similar fashion by applying the ratio described above to total industry compensation and revenues at the state level.

d. Expenditure-Induced Economic Activity

Upper range estimates for employment due to expenditure-induced economic activity are based on state level multipliers.[2] These multipliers represent the ratio of Core and Supplier Sector FTE employees to expenditure induced FTE employees by state. We based compensation estimates on average annual pay by industry and state for 1992.

[2] U.S. Department of Labor, *Employment and Wages Annual Averages, 1991*, released January 1993.

III. ECONOMIC ACTIVITY ASSOCIATED WITH THE WATERWAY TRANSPORTATION SYSTEM

In this section, we present the results of our economic analysis of the inland waterway industry attributable to the Upper Mississippi River-Illinois Waterway system. Our discussion of the economic activity associated with the waterway is organized according to the four sectors described in Section I of this report:

- *Core Sector*
- *Supplier Sector*
- *Waterway-Related*
- *Expenditure-Induced Economic Activity*

Below, we provide the results of our analysis of the economic contribution of the inland waterway system, followed by a summary section outlining the total economic contributions of the industries in the waterway system.

A. Core Sector

1. Description of Economic Activity

The Upper Mississippi River-Illinois Waterway contributes to the employment, compensation, and revenues of businesses within the Core Sector of the inland waterway transportation industry. The Core Sector represents the main components of the inland waterway transportation industry. Its three major components are described below.

The barge and towboat industry operates along the Mississippi River and its tributaries. The inland waterway transportation industry comprises more than 900 barge and

towing companies. According to the U.S. Army Corps of Engineers, the 1991 inland waterways fleet, which is the most recent year for data reported in the 1994 edition of the U.S. Industrial Outlook, barge and tow companies operated approximately 5,000 towboats, 27,000 dry cargo barges, and 4,000 tank barges.[1]

The barge and towing industry has been consolidating over the past decade. Presently, the top nine operators control more than 45 percent of total industry capacity. Ten years ago, nearly 2,000 waterway transportation companies were operating on the Mississippi River and its tributaries. Market conditions have reduced the profitability of some of the smallest waterway transportation companies, which have had difficulty competing with the larger multi-service firms on the rivers. The inland waterway transportation industry now operates with a smaller fleet than it did a decade ago. Inland waterway transportation vessels each currently handle more tonnage and complete more trips annually than they did a decade ago.

Port facilities provide necessary services to the waterway transportation system. In order to load and unload cargo, barge companies must pay rent, fleeting (parking) and port fees to the fleet and port facilities. Other services offered include barge cleaning, repairing, and boat refueling and supplies. Equipment and other provisions can also be purchased at the ports. The port facilities also provide security services for the barges and cargo.

Marine cargo and freight transportation services include all services directly related to cargo handling. One service offered is the transportation of cargo through the terminal. This includes loading, discharging, and checking the cargo. The marine cargo and freight transportation sector also serves the barges by providing the labor and equipment needed to transport the freight within the cargo area.

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[1] *U.S. Industrial Outlook 19934* U.S. Department of Commerce, International Trade Administration, page 40-16.

2. Results

Based on our analysis of the Core Sector of the inland waterway transportation system, we have estimated that $4.2 billion in revenue is generated in the ten states along the Mississippi River. This revenue supports just under 36,000 FTE jobs, resulting in $881 million in employee compensation. We summarize our results by state in Table III-1.

Table III-1

Core Sector Economic Activity by State			
State	Employment (FTE's)	Compensation (in thousands)	Revenue (in thousands)
Upper Mississippi			
Illinois	3,737	$102,714	$668,271
Iowa[2]	449	$7,301	$32,568
Minnesota	1,253	$31,135	$76,275
Missouri	2,124	$53,037	$269,162
Wisconsin	1,049	$21,263	$132,074
Subtotal Upper	8,612	$215,450	$1,178,350
Lower Mississippi			
Arkansas	379	$8,690	$22,120
Kentucky	3,719	$92,854	$605,656
Louisiana	18,364	$446,907	$1,737,098
Mississippi	2,214	$56,810	$229,966
Tennessee	2,619	$60,360	$412,658
Subtotal Lower	27,295	$665,621	$3,007,498
Total Impact	**35,907**	**$881,071**	**$4,185,848**

Due to the proprietary nature of industry data, some primary and secondary sources withhold data. In certain instances, government sources provide insufficient data for analysis

[2] Employment figures for the state of Iowa, as well as for other states, are based on Bureau of Labor Statistics (BLS) and Bureau of the Census data. For certain industries analyzed in Iowa business is unreported because data do not meet BLS or state agency disclosure standards. For example, our survey results have identified individual firms within 4-digit SIC classes that have total FTE employment of 2.5 times that indicated in the official government sources. As a consequence, estimates for business activity attributable to the waterway transportation industry are conservative.

as well. In these cases, we assumed a value of zero for economic activity in those industries. As a consequence, in Iowa and in some other states, actual figures on employment, compensation, and revenue probably exceed those reported here.

B. Supplier Sector

1. Description of Economic Activity

As described previously, a wide range of industries provide the inputs for the Core Sector's final components. Through its expenditures on supplies and inputs, the inland waterway transportation industry has an indirect economic influence on many other major industries in the United States.

The suppliers provide goods and services for the Core Sector's daily operations. As a result, employment and compensation are generated in the Supplier Sector. The Supplier Sector industry includes, but is not limited to the following industries:

- Boat and Barge Building and Repair
- Fuel and Petroleum Products
- Heavy Machinery
- Advertising
- Other Supplies
- Insurance
- Legal
- Accounting

The inland waterway transportation industry uses the goods and services provided by the boat and barge building and repair industry. This industry constructs, builds, repairs, and remodels vessels, such as the barges and boats needed by the inland waterway transportation industry.

The inland waterway transportation system also depends on the fuel and petroleum industry to supply the fuel used to transport cargo and the oils used to lubricate equipment and machinery.

The inland waterway transportation system uses heavy machinery manufactured by Supplier Sector companies to move heavy freight. This machinery is used to load and unload cargo on the docks and to move it to or from the trains or trucks to the vessels.

In addition to goods that are used as inputs for the inland waterway transportation industry, the Supplier Sector also provides services that are necessary for the Core Sector's operations. One of the services provided by the Supplier Sector is advertising. The inland waterway transportation industry relies on advertising in trade journals and other publications to promote their services and relay cost information. In the competitive market of transporting commodities, price information is critical.

Many other industries provide additional supplies such as food, paint, tools, and other items needed for the transportation of goods on the inland waterway system. Without all of these inputs from the Supplier Sector, the Core Sector would be unable to transport goods on the river.

2. Results

For our analysis of the Supplier Sector, we estimated employment, compensation, and output associated with these inter-industry linkages to the inland waterway transportation industry. For example, fuel suppliers to the Core Sector in port cities receive direct payments from towing companies for providing transportation fuel to vessels. In turn, the fuel suppliers are also dependent on a network of suppliers who are responsible for processing and transporting the fuel to the ports.

Based on our analysis of the data collected from members of the waterway transportation industry, we have estimated that a total of $1.1 billion in revenue is generated in supplier sector operations. This revenue supports 6,124 FTE jobs, resulting in $163.3 million in employee compensation. In Table III-2, we summarize our results by state.

Table III-2

Supplier Sector Economic Activity by State			
State	Employment (FTE's)	Compensation (in thousands)	Revenue (in thousands)
Upper Mississippi			
Illinois	474	$17,116	$184,783
Iowa	114	$2,353	$9,005
Minnesota	162	$4,784	$21,091
Missouri	519	$14,685	$74,426
Wisconsin	212	$5,638	$36,520
Subtotal Upper	1,481	$44,576	$325,825
Lower Mississippi			
Arkansas	19	$457	$6,116
Kentucky	1,424	$34,945	$167,469
Louisiana	602	$25,194	$480,323
Mississippi	2,059	$45,907	$63,588
Tennessee	539	$12,187	$114,104
Subtotal Lower	4,643	$118,690	$831,600
Total Impact	**6,124**	**$163,266**	**$1,157,425**

C. Waterway-Related Economic Activity

1. Description of Economic Activity

Many businesses, and particularly those in the agricultural, petrochemicals, and extractive industry sectors are located along the river system to take advantage of the cost effective transportation that it provides. These industries have created an industrial network that produces goods and creates demand for barges and tow services.

2. Results

Based on our analysis of the industries that rely on the waterway system to transport American goods, we estimated the jobs and compensation attributable to the Waterway-Related Sector. We estimate that a total of $5.8 billion in revenue was generated by the goods which were transported on the river by this sector in 1992. This revenue supports 19,207 FTE jobs, resulting in approximately $486 million in employee compensation. In Table III-3, we summarize our results by state.

Table III-3

Waterway-Related Sector Economic Activity by State			
State	Employment (FTE's)	Compensation (in thousands)	Revenue (in thousands)
Upper Mississippi			
Illinois	5,691	$133,379	$1,605,821
Iowa	1,083	$13,249	$482,703
Minnesota	1,064	$17,730	$559,274
Missouri	1,127	$15,335	$440,665
Wisconsin	129	$2,426	$36,376
Subtotal Upper	9,094	$182,119	$3,124,839
Lower Mississippi			
Arkansas	1,364	$19,565	$397,161
Kentucky	5,643	$193,881	$1,439,541
Louisiana	1,722	$65,608	$400,305
Mississippi	654	$13,105	$235,131
Tennessee	730	$11,604	$199,966
Subtotal Lower	10,113	$303,763	$2,672,104
Total Impact	**19,207**	**$485,882**	**$5,796,943**

D. Expenditure-Induced Economic Activity

1. Description of Economic Activity

The inland waterway transportation industry maintains relationships, or linkages, with numerous industries. Through these linkages, nearly every major industry in the U.S. experiences the impact of the expenditures by inland waterway transporters, their suppliers, and industry employees.

The expenditure-induced activity associated with the waterway system is generated by the expenditures of the industry's Core, Supplier, and Waterway-Related sectors and their employees. Employees of these sectors are paid wages and salaries. These employees spend a substantial portion of their wages on goods and services. As described previously, during each round of spending, money is paid out as wages to more employees and then spent again.

Due to leakages with each successive round through the economy, the income flow decreases. The sum of the income flows represents the expenditure-induced contribution of the initial round of spending on the economy.

However, it is difficult to accurately estimate the revenue attributable to the expenditure-induced economic activity associated with the waterway system for a variety of reasons. In some cases, such revenue may be double-counted: One industry's supply costs become another industry's wages, profits, and input expenditures. Since the potential for double-counting exists in estimating the direct contribution of the industry, a multiplier can be difficult to specify on levels lower than the economy as a whole.

There exists a wide range of incomes per worker and revenues generated per worker across the states examined in this study. This suggests that the capital/labor inputs per

industry vary widely. Annual salaries, for example, for each of the industries analyzed for the study remain range from approximately $12,500 for certain agricultural industries to a high of over $36,000 for some manufacturing jobs. However, the revenue generated per employee for these industries range from a low of approximately $31,000 per employee for certain state supplier sector industries to a high of approximately $800,000 per employee in certain capital intensive businesses, such as in the oil and gas industry. With such a wide range of revenue generated per employee in each industry, a single multiplier coefficient is not likely to capture that range precisely or accurately.

Another complication is that of geographic dispersion. Expenditure-induced effects, to the extent that they may be generated, could occur locally within the ten states along the inland waterway system, nationally, or indeed internationally. Therefore, it is difficult to pinpoint the fraction that is attributable to the waterway states.

Finally, the structure of the local economy will influence the degree to which expenditure-induced effects occur. At one extreme, in a closed economy with no scope for imports or exports and fixed quantities of capital and labor, no expenditure induced effects would occur and one sector would grow only as another shrinks. The same effect could arise if many of the inputs came from beyond the 10-state waterway system. This extreme does not, of course, describe the state economies under examination here. At the other extreme, where most of the inputs come from the 10-state waterway system, and local resources are not fully utilized, the ripple effects may be much larger. A typical estimate of the multiplier in this case is 1.5. The ripple effect under these circumstances would include approximately 92,000 additional FTE jobs generating $2.3 billion in compensation. In Table III-4, we summarize our results by state.

Table III-4

Expenditure-Induced Sector Economic Activity by State		
State	Employment (FTE's)	Compensation (in thousands)
Upper Mississippi		
Illinois	14,852	$379,814
Iowa	2,469	$34,354
Minnesota	3,719	$80,473
Missouri	5,655	$124,586
Wisconsin	2,086	$43,990
Subtotal Upper	28,781	$663,217
Lower Mississippi		
Arkansas	2,643	$43,067
Kentucky	16,178	$482,520
Louisiana	31,031	$806,562
Mississippi	7,390	$173,733
Tennessee	5,833	$126,227
Subtotal Lower	63,075	$1,632,109
Total Impact	**91,856**	**$2,295,326**

E. Total Economic Contribution

In Table III-5 we summarize total full-time equivalent employment, compensation, and revenue generated by the waterway transportation system for all states located on the Mississippi River. Revenues per FTE employee in the Core, Supplier, Waterway-Related, and as a consequence of expenditure-induced economic activity vary across states for a variety of reasons including:

- *Geographic location of industries* - Different industries are dominant in different states. For example, the coal mining industry, which is relatively labor intensive , is the dominant Waterway-Related Sector industry in Kentucky. The agricultural industry, which is relatively capital intensive is the dominant Waterway-Related Sector industry in Iowa. Therefore, Kentucky has a lower revenues per FTE than does Iowa.

- *Variations in the labor and capital intensity of different industries in different states* - We surveyed a wide cross-section of industries for this study. In addition to industry variations in capital and labor intensity, we found regional differences in intensities. These differences may be reflected in revenues per FTE even when industry shares are similar across states.

- *Prevalence of part-time and/or seasonal employees in certain industries* - All employment figures are estimated in full-time equivalents. However, certain industries, such as agriculture in particular, employ a high number of part-time and/or seasonal employees. Revenues per FTE may vary with the composition of the FTE -- whether a single full time employee or several part time and seasonal workers.

- *The number of government employees* - Although each of the states included in the study has government employees stationed along the Mississippi and/or Illinois Rivers, certain states have more government employees than others do. Revenue per employee in the government sector was not estimated due to insufficiency of data.

- *The location of companies' headquarters* - For example, states such as Louisiana and Tennessee have a higher ratio of Core Sector waterway system employees relative to other states included in the study due to the greater concentration of tow and tug companies and other waterway transportation industries within those two states. States in this study which have corporate

headquarters will generally have higher revenue to employee ratios than states which do not have corporate headquarters.

- *The insufficiency of data in certain markets* - Due to the proprietary nature of the industry data, certain state-wide government data sources provided insufficient information on certain industries. In cases where proprietary data was unavailable, estimates of economic activity for an industry were not made. This practice leads to relatively conservative estimates, which may be more conservative for some states than for others.

Based on the results of our analysis, we estimated the total economic contribution, in terms of jobs, compensation, and revenues attributable to the waterway transportation system. We estimate that 35,907 FTE jobs,[3] with $881 million in compensation, and revenues of $4.2 billion are associated with the Core Sector of the waterway industries. We estimate that this activity induces local supplier sector activities that, in turn, account for 6,124 FTE jobs with $163.3 million in compensation and over $1.1 billion in revenues. We estimate that 19,206 FTE jobs, $486 million in compensation, and $5.8 billion in revenues were attributable to the Waterway-Related Sector of the industry.

Finally, some expenditure-induced economic activity may occur in the ten states by virtue of the activity associated with the waterway industries and suppliers. We estimate that the expenditure-induced activities could generate up to 92,000 additional FTE employees earning $2.3 billion in compensation. In Table III-5, we summarize our results of the economic contribution of the waterway transportation industry.

[3] The actual number of people employed may be significantly higher depending on the proportion who are seasonal, part-time or occasional employees of the Sector.

Table III-5

Total Economic Activity Attributable to the Inland Waterway Transportation Industry			
Sector	Employment (FTE's)	Compensation ($000's)	Revenue ($ 000's)
Core Sector	35,906	$881,071	$4,185,849
Supplier Sector	6,124	$163,266	$1,157,425
Waterway-Related	19,206	$485,882	$5,796,943
Expenditure-Induced	91,856	$2,295,328	N/A
Total	**153,092**	**$3,825,547**	**$11,140,217**

Estimates of expenditure-induced economic activity, and associated FTE employment and revenues are uncertain for a variety of reasons, including:

- the risk of double counting revenues attributable to each sector
- the wide disparity in incomes, revenues per employee, and capital to labor ratios within each industry makes precise estimation difficult
- the geographic effects of expenditure-induced economic activity are not easy to locate

In Table III-6 we summarize our estimates of the individual Federal, state, and local income tax payments associated with employment in the waterway transportation industry for the ten states which border the Mississippi River and corporate Federal income tax payments. The dollar estimates for taxes payable are based on average tax rates (taxes paid divided by a measure of income -- Adjusted Gross Income or personal income) for the populations of these states for single filers. To the extent that the average incomes of waterway industry workers differ from state averages, or payments differ due to differences in filing statuses, actual payments will differ from the estimates presented below.

Table III-6

Estimated Personal and Corporate Income Taxes Associated with Employment and Business Revenues in the Inland Waterway System				
Sector	Federal Individual Income Taxes ($ millions)	State & Local Individual Income Taxes ($ millions)	Total Individual Income Taxes ($ millions)	Federal Corporate Income Taxes ($ millions)
Core Sector	$119.3	$15.8	$135.0	$37.7
Supplier Sector	$22.1	$2.9	$25.0	$15.1
Waterway-Related	$65.8	$8.7	$74.5	$113.8
Total Contribution Subtotal	**$207.2**	**$27.4**	**$234.5**	**$166.6**
Expenditure-Induced	$310.7	$41.1	$351.8	*
Grand Total	**$517.9**	**$68.5**	**$586.3**	

* The approximate nature of corporate tax estimates based on industry revenue figures, coupled with the uncertainties associated with expenditure-induced revenue estimates themselves precludes estimation of federal corporate tax receipts for this sector.

Assuming that the expenditure-induced multiplier effects exist in full measure and accrue entirely to the waterway states, total personal income taxes paid by the employees associated directly and indirectly with the waterway industry may be as high as $586.3 million for 1992. Estimated personal income tax payments by employees of the Core Sector of the waterway transportation industry total $234.5 million, of which estimated payments to federal income taxes total $207.1 million, and state income taxes, $27.4 million. For the purpose of this analysis, we did not estimate sales, or other tax payments by individuals.

Figures for federal, state, and local individual income taxes were the product of estimated compensation for each sector of the waterway transportation industry and the average personal tax rates in each state bordering the Mississippi River. Average federal individual income tax rates were obtained by dividing total individual income tax collections

by personal income in each state in 1990.[4]

Our associated corporate income tax payments estimates are based on our associated revenue estimates by four-digit SIC code industries and on Federal government statistics on tax payments and business revenues.[5] In cases where the Statistics of Income (SOI) publications of the Internal Revenue Service provided data for an industry that was part of the Core, Supplier, or Waterway sectors, we estimated the average tax rate on revenues as corporate income taxes paid after deductions and credits, divided by business revenue. We used a definition of gross business revenue that does not include net income from interest, dividends and distributions. While this definition underestimates total business revenues, it corresponds more closely to the types of business revenues estimated in this study. There is, however, some possibility of a small upward bias in our estimated corporate income tax payments as a consequence. In cases where SOI data were lacking for a particular industry, we relied upon the Office of Management and Budget's estimates for the average tax rates (Circular A-76).

Actual tax payments depend on complex formulas that are based on corporate profits and other factors. The rates used here apply only to incorporated businesses. To the extent that some of the businesses represented in the revenue estimates in Table III-6 are unincorporated, tax revenues will differ. The most recent available SOI tax payments statistics apply for tax filings filed between July 1 1990 and June 30, 1991. As a consequence, there is some slippage between the period of coverage for tax rate information and estimated business revenues. That slippage will be significant to the estimation of tax payments only if tax payments represented a significantly different fraction of business

[4] The Tax Foundation, *Facts and Figure on Government Finance*. Washington D.C., 1992. pages 216 and 244.

[5] Tax payments as a fraction of business receipts are based on data in Statistics of Income Division, Internal Revenue Service, Department of the Treasury, *Corporation Source Book of Statistics of Income, 1990, Active Corporation Income Tax Returns, July 1990-June 1991*, Washington DC Government Printing Office. For some industries, we used rates provided by: Office of Management and Budget, *Circular A-76, Performance of Commercial Activities*, Washington DC, September 28, 1990.

revenues in 1992. Because tax rates, profit rates and other determinants of actual tax payments vary across industries and time, the estimates above are intended only to be suggestive of the magnitude of probable income tax payments.

American Association of Port Authorities

1010 Duke Street, Alexandria, VA 22314
Phone (703) 684-5700
Fax (703) 684-6321
TWX 710-832-9823

TESTIMONY OF ERIK STROMBERG
PRESIDENT
AMERICAN ASSOCIATION OF PORT AUTHORITIES

BEFORE THE HOUSE PUBLIC WORKS AND TRANSPORTATION
SUBCOMMITTEE ON INVESTIGATIONS AND OPERATIONS

MAY 4, 1994

Good morning. My name is Erik Stromberg and I am the President of the American Association of Port Authorities (AAPA). Founded in 1912, AAPA represents virtually every major U.S. public port agency, as well as the major port agencies in Canada, Latin America and the Caribbean. My testimony today reflects only the views of the United States delegation of AAPA.

First of all, I would like to thank you, Mr. Chairman, for your leadership in holding this hearing on port and water infrastructure. The deep draft commercial ports of our country handle over 95 percent of the Nation's international trade -- nearly one billion tons of cargo a year worth almost 500 billion dollars. The importance of ports to local, state and regional economies cannot be overstated.

Seaports are a critical link in the intermodal transportation chain. In addition to the direct value of trade, port activities create direct and indirect economic benefits for the Nation, as well as the local port community. According to recent figures from the Maritime Administration (MarAd), in 1991, cargo activities at U.S. ports created 1.5 million jobs, contributed $70 billion to the gross national product, provided personal income of $52 billion, and generated federal taxes of $14 billion, state and local taxes of $5.3 billion.

Despite these economic benefits and although an integral part of our U.S. transportation system, too often ports and the freight and cargo that moves through them are the forgotten stepchildren in the debate on our national transportation infrastructure needs. According to a recent AAPA survey, capital financing for port development projects and the adoption of national policies that recognize the need to invest in dredging navigation channels as well as provide efficient landside access to port facilities are the preeminent issues for our nation's ports.

The infrastructure needs of U.S. ports vary in terms of type of project and funding source. Ports themselves build cargo handling and related terminal facilities with their port revenues, local public dollars and by using tax exempt bonding authority. Ports depend largely on the federal government to fund the lion's share of projects to provide landside

access to terminal facilities, funded with both federal (80%) and state or local dollars (20%) under the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). In addition, ports must rely heavily on federal funds to dredge federal navigation channels to provide waterside access to their terminal facilities, with federal and port cost sharing for new projects (i.e. to widen or deepen channels) and maintenance dredging paid for out of the Harbor Maintenance Trust Fund (funded by an ad valorem tax on cargo paid by shippers). (Ports do pay for dredging their own access channels and berths.)

These infrastructure needs are interrelated. It is important for this Subcommittee, and for Congress, to understand that no matter how productive our marine terminal facilities are, our port and intermodal transportation system cannot operate to maximum efficiency unless ports are accessible by ship on the waterside and cargo can move quickly and easily in or out of ports from the landside. The intermodal transportation system can be compared to a pipeline with its overall efficiency determined by the pipeline's most narrow section.

With the serious shortfalls in public budgets, public investments must be directed where they're needed most, that is, where they can create the greatest benefits. In our view, the greatest benefit from the investment of federal dollars would be at the narrowest sections of the intermodal pipeline, which are increasingly (1) the connections to the port with the interstate highway system or rail and (2) waterside access. Since the amount of international cargo moving through U.S. ports has been projected to triple by the year 2020, the need for efficient water and landside access can only increase and must be planned for today.

In this testimony, we (1) offer the Subcommittee specific suggestions on increasing funding for freight projects meeting national needs under ISTEA and (2) ask for assistance in making changes to the Clean Water and Water Resources Development Acts to allow critical dredging projects to proceed in a more timely and cost effective manner, including changes in how dredged material disposal costs are apportioned. We have also provided, for your information, data on port financing for terminal facilities.

(1) Landside Access

ISTEA not only completely revamped our federal aid highway program, placing a new emphasis on intermodalism, but specifically recognized the importance of access to seaports. The Act provided more authority for decision-making at the local level and added flexibility in transferring funds between programs. Moreover, the language in ISTEA clearly recognized the national interest in an efficient freight transportation system as a critical factor in our country's ability to compete in the international marketplace, and assure competitive prices for U.S. consumers.

Unfortunately, after two years, ISTEA has not lived up to its promise to expand transportation planning and funding to meet national intermodal needs. Freight projects meeting national transportation needs still are not receiving a fair allocation of funding with local decision-making. The expression "Freight Doesn't Vote" sums up the political reality at the local level--the needs of passenger traffic are considered first, and there is little or no thought to providing access to intermodal facilities handling freight. The need to increase

the focus on freight and afford it the priority it deserves was clearly voiced in the outreach meetings that the Department of Transportation held on ISTEA last year, and was included by DOT in its action plan following up those meetings. Freight projects meeting national needs will not receive their fair share of federal aid unless and until the federal government directs state and local governments to do so.

The U.S. public port community strongly supports the provisions of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) that recognize the need to expand the scope of U.S. transportation planning and funding to include the needs of intermodal freight transportation. We also strongly support Transportation Secretary Peña's efforts to expand the National Highway System (NHS) into a National Transportation System (NTS). However, given the size of the NHS itself and the flexibility to transfer NHS funds to other program categories, the inclusion of a project that would benefit freight movements on the National Highway System does not alone mean those projects will ever see any funding. The expansion of the NHS into a National Transportation System is a very important next step. However, we should not stop there.

AAPA respectfully offers the following suggestions:

(1) ISTEA should be made truly intermodal by allowing the use of all program funds for rail freight projects (currently, only Congestion Mitigation and Air Quality funds, which are limited, can be used for rail freight). Many worthwhile port rail freight access projects, for both rail bridges and double stack train access, have been rejected for funding because of current limitations.

(2) ISTEA should create a financial incentive to fund national need projects (particularly access to intermodal facilities) either through a separate funding source or a higher federal cost share for projects meeting certain criteria.

(3) The Administration should develop and support innovative financing ideas for transportation infrastructure projects. One example is H.R. 3231 (Tucker, D-CA), a bill that would allow the use of tax exempt bonds to finance transportation facilities beyond the dock, including trackage or rail facilities.

Ports continue to be frustrated in their efforts to obtain funding for freight projects meeting national needs. Even though ISTEA favors decision-making at the local level, further program guidance at the national level in the area of freight movement is appropriate because it reinforces the country's fundamental dependence on international trade and commerce. The expenditure of federal funds on projects that promote our nation's ability to handle the export and import goods being traded in international markets is a worthy investment. If changes are not made, we are concerned that freight projects will have to continue competing for transportation funds under a process that inherently favors traditional and more popular local transit and highway projects.

In terms of current infrastructure needs for landside access, I do not have any up-to-date information. I can tell you that when we surveyed our members in early 1992 on ready-to-

go projects needing immediate funds, we received responses including more than $3.2 billion in infrastructure needs, including numerous landside access projects.

(2) Waterside Access

Due to natural siltation processes, there is no alternative to dredging federal navigation channels if port operations are to continue, and if harbors are to be improved to handle the increased trade volumes expected in the coming decades. Approximately 400 million cubic yards of sediment is dredged annually, some 5 to 7 percent of which is seriously polluted. With regard to funding, our members have estimated that they will spend $514 million on dredging from 1993-1997. This includes local port expenditures associated with the dredging of federal and non-federal channels and berths, as well as the local costs for land, easements, rights-of-way, and disposal areas. The $514 million includes only non-federal expenditures.

The U.S. Constitution gives the federal government exclusive jurisdiction over "interstate and foreign commerce" and over the navigable waters of the United States. This means, among other things, that the regulation, development, and maintenance of deepwater navigation channels is ultimately a federal function. Since 1986, certain costs, particularly for channel construction and improvement, have been "shared" with non-federal government entities. In addition, since the 1986 Water Resources Development Act (WRDA 86), the maintenance of federal channels has been funded by user fees assessed on shippers based on the value of cargo. Increasingly, however, environmental laws including the Clean Water Act, Ocean Dumping Act and Endangered Species Act, as well as state and local requirements, have come to play a central role in the planning and construction of navigation projects, increasing costs associated with project planning, design and implementation.

With the passage of WRDA 86, ports have become "partners" with the Corps in terms of cost sharing, but that partnership role often consists of nothing more than signing a blank check for an amount over which ports have no control. On the other hand, since ports are now responsible for a share of project costs, they have begun to carefully weigh projects and ask questions such as "Will the additional business or cost savings gained with a deeper channel return more to the port and local economy than an investment in shore side transportation infrastructure such as additional terminal acreage or on-dock rail?"

The maritime, port, labor, and business communities have called for the adoption of a National Dredging Policy to facilitate the timely and cost-effective dredging of our nation's navigation channels. Toward that end, AAPA has received a letter from President Clinton who pledged to call on federal agencies to "redouble their efforts" to find solutions to dredging problems. A copy has been provided to the Subcommittee staff. These waterways are our international highways to the global marketplace. The development and maintenance of these navigation channels is essential if we are going to remain competitive and take full advantage of expanding international trading opportunities.

The dredging of our nation's navigation channels to keep them open for trade, however, is too often frustrated by inconsistent, complex and duplicative laws and regulations. In

order to overcome these problems and to provide a more coherent and consistent program for dredging and managing sediments, inconsistencies between the Clean Water (CWA) and Ocean Dumping Acts (ODA) need to be reconciled. Outdated provisions in the 1986 Water Resources Development Act (WRDA) that favor open water disposal over confined and upland disposal options need to be revised. These changes are required in order to establish a clear and consistent federal responsibility for long-term disposal planning, including assurance of continuing adequate capacity and the construction of dredged material disposal sites.

In order to provide for implementation of the National Dredging Policy objectives, AAPA has advocated the following legislative changes:

(1) Establish a new section 406 of the Clean Water Act, separate from the 404 wetlands provisions and consistent with the ODA, for permitting of the discharge of dredged material from navigational dredging to EPA approved disposal areas;

(2) Amend other provisions of the CWA to emphasize the prevention of pollution that may contaminate sediments and to require consideration of the use and value of the waters and channels to navigation in establishing appropriate criteria and standards; and

(3) Establish a comprehensive program under WRDA, clarifying a federal responsibility for siting, construction and funding of confined and land-based disposal facilities for dredged material, in connection with construction of authorized federal navigation projects, that does not meet criteria for open water disposal.

Let me elaborate on the last point. Ports are currently responsible for funding construction of any needed confined dredged material disposal areas. As environmental regulation has become more stringent and testing techniques more sophisticated, an increasing amount of material has been required to go to confined disposal facilities, a result not anticipated back in 1986. As part of its legislative proposals to implement the National Dredging Policy, AAPA proposes that any CDFs and upland disposal sites that have to be constructed to accommodate dredged material associated with authorized harbor and channel dredging would be considered part of the general navigation features of the project and therefore, be subject to the same cost-sharing requirements as any other part of the project.

This would be a change from current law and remove an existing strong economic incentive to utilize open water disposal sites wherever possible, even where this may not be the most environmentally preferred option. This approach would reduce the disparity of treatment between open water disposal sites -- for which the federal government shares the cost with local sponsors, and confined and upland sites -- which, in most cases, is total non-federal (i.e. local) cost.

We will seek the assistance of members of this Subcommittee as the Clean Water Act is considered by the full committee in the coming weeks and months.

(3) Port Terminal Facilities

Shoreside cargo handling facilities and other infrastructure related to the ports' primary function has historically been financed almost entirely through the use of public monies. According to the U.S. Department of Transportation, U.S. ports invested more than $12.5 billion from 1946-1992 on port and related shoreside transportation infrastructure and are expected to invest more than $5.5 billion more over the next five years. This reflects the continued commitment of the port community and the local and state governments to upgrade their infrastructure to reflect the latest in efficient intermodal facilities.

During the 1990-92 time period, the financing methods used most often by ports for capital expenditures were port revenues (retained earnings) (39 percent of total expenditures), general obligation bonds (12.5 percent), and revenue bonds (28.9 percent). Specialized general cargo facilities continue to account for nearly one-third of the current and projected expenditures. These statistics are based on a survey of AAPA members and are contained in the United States Port Development Expenditure Report, published by the MarAd earlier this year, a copy of which I have provided to the Subcommittee staff.

According to the MarAd study, port revenues and revenue bonds are expected to be the predominant method of financing port infrastructure projects in the future. The growing dependance on port revenues for capital improvements intensifies the need for ports to be able to control their own financial future without the interference of cash starved local and state governments.

In 1992, for example, the State of California enacted legislation giving municipal governments with tideland ports, the authority to "take" discretionary reserves for municipal services (not related to port activities.) The "discretionary reserves" that have been syphoned were port revenue dollars set aside for future capital improvements. The net effect of the so-called "cash grab" is a port system in California that may not be able to fully finance infrastructure improvements needed to facilitate trade in the future. The cash grab has also effected the ports' bond rating. Soon after the legislation was enacted, the ports of Los Angeles, Long Beach, San Francisco and Oakland were placed on Credit Watch by Standard and Poor's Corporation. Although the California law is supposed to be repealed on January 1, 1995, new state legislation to extend the authority of municipalities to use port revenues to fund other municipal services is being considered. No other state has gone so far as to raid the coffers of the ports. However, other states and local governments may be forced to look at port revenues as a source for funding basic public services in the future.

In addition to preserving an unencumbered pool of port revenues for capital improvements, preserving and enhancing the ports' ability to use tax exempt bonds is a critical element of future port infrastructure financing. This authority was fundamentally reviewed and reaffirmed in the Tax Act of 1986, however some restrictions were imposed that have made it more difficult to use tax exempt bond authority. These new restrictions, in addition to other longstanding regulations, can impede port financing.

For example, port bonds do not have advance refunding capabilities similar to municipal bonds. This restriction ties the hands of public port administrators, as well as ties up much

needed revenue. For example, the Virginia Port Authority (VPA) has issued a 20-year, $106 million bond issue to support infrastructure at its three Hampton Roads terminals which cannot be refunded because of Industrial Development Bond regulations. Since VPA cannot refund this bond issue until 1998, it missed a prime opportunity in 1993 to refund during that period of uncommonly low interest rates. If VPA could have refunded its 1988 bonds, it would have realized $1.5 million to $2 million per year in debt service. The "freed up" cash could have been used for additional debt service on a new tax exempt issue or to fund other port development projects.

Thank you and I would be happy to answer any questions.

ASSOCIATION OF METROPOLITAN SEWERAGE AGENCIES
1000 CONNECTICUT AVENUE, N.W. SUITE 410 WASHINGTON, DC 20036-5302
(202) 833-AMSA FAX (202) 833-4657

Statement of the
Association of Metropolitan Sewerage Agencies
before the
Subcommittee on
Investigations and Oversight
of the
House Public Works & Transportation Committee
on
Funding National Infrastructure Needs

May 4, 1994

Testimony provided by
Edward O. Wagner
Member, AMSA Board of Directors
Chair, AMSA Legislative Policy Committee
Deputy Commissioner
New York City Department of Environmental Protection
Director, Bureau of Clean Water
New York, New York

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Mr. Chairman and members of the Subcommittee, I am Edward Wagner, Deputy Commissioner of the New York City Department of Environmental Protection and Director of the City's Bureau of Clean Water. I appear before you representing the Association of Metropolitan Sewerage Agencies (AMSA). AMSA's members represent over 150 of the nation's largest wastewater treatment agencies. We serve well over 90 million of the 176 million total sewered population in the United States, and collectively treat over 14 billion gallons of wastewater each day.

I am pleased to be here today to provide our perspective concerning funding our national infrastructure needs. We greatly appreciate the opportunity to share with you our thoughts and recommendations as environmental practitioners dedicated to improving the quality of the nation's waters. Through our testimony, AMSA will respond to the specific questions you have posed, and provide our recommendations for the future funding of wastewater infrastructure needs.

RESPONDING TO NATIONAL CLEAN WATER INFRASTRUCTURE NEEDS

Just two years ago the nation celebrated the 20th anniversary of the passage of P.L. 92-500. The Federal Water Pollution Control Act was landmark clean water legislation, passed by Congress in 1972 over a Presidential veto. It was a deliberate response to mounting environmental problems and a demonstration of true federal leadership to protect the nation's waters.

Today, as a result of the collective efforts of cities, states and the federal government, it's difficult to find a city in America where the harbor, riverfront or waterway isn't the showcase of the community. Implementation of the Clean Water Act has brought enormous water quality progress.

Data collected by AMSA between 1986 and 1993 clearly demonstrate this fact. Through the national pretreatment program, heavy metals found in wastewater received at treatment plants (influent) were reduced from 168,000 lbs/day in 1986 to 87,000 lbs/day in 1993. Levels of pollutants (biochemical oxygen demand and suspended solids) removed from wastewater treatment plant discharges (effluent) were reduced from 11, 000,000 lbs/day in 1986 to 7,000,000 lbs/day in 1994.

But, improvements in water quality have not been the sole benefit of our national clean water program. Along with the environmental improvements, the nation has benefited from jobs, economic development and outstanding recreational opportunities for our citizens.

As the 103rd Congress continues with efforts to reauthorize the Clean Water Act, there are strong emotions regarding the future direction of the program and who should pay. AMSA offers it's response in a report titled "The Cost of Clean."

THE COST OF CLEAN - 1994

Next week, AMSA will publish the results of a needs survey of its membership. Our report is titled "The Cost of Clean - 1994." This report documents the fact that our

water pollution control needs, as a nation, are considerable. Emerging needs associated with combined sewer overflows, stormwater management, nutrient control, and nonpoint source control will clearly require additional funds.

In years past, environmental mandates have increased in both their number and cost, and federal financial support of the nation's clean water program has diminished. As a result, the nation's ratepayers have been asked time and time again, to pay an increasing share of this financial burden. Without a doubt, the price tag for ongoing water quality needs will continue to escalate. The question we must address as a nation is not only who will pay the cost of clean, but also how we will respond.

1993 - 1998 Capital Needs Total $32.4 Billion

As reported in The Cost of Clean, the capital needs from 1993-1998 for AMSA's member agencies totaled $32.4 billion. It's significant to note that this dollar figure represents the needs of just under 100 local wastewater treatment agencies for the near term.

The total documented needs represent committed projects, projects underway and projects scheduled to begin during the next five years. The capital needs reported by AMSA's members in The Cost of Clean are distributed as follows:

Secondary Treatment	$9.6 billion (30% of the total needs)
Repair & Rehabilitation	$8.5 billion (26% of the total needs)
Collection System	$6.1 billion (19 % of the total needs)
Combined Sewer Overflow	$4.8 billion (15% of the total needs)*
Advanced Treatment	$3.4 billion (10% of the total needs)

*28 of 99 responding agencies reported CSO needs. 1,100 communities nationwide have CSOs.

Needs in the areas of inflow and infiltration and stormwater management are included in the collection system category, while air quality needs are reflected in Advanced Treatment. Rehabilitation costs reflect a growing emphasis on the repair and replacement of existing treatment systems, many of which were built in the early years of the Clean Water Act. This trend is expected to continue for years to come.

Operation and Maintenance Costs Escalating

Operation and maintenance (O & M) expenses traditionally make up a higher percentage of a local agency's budget than capital costs and are paid for totally by local communities. The documented trend in this area is as follows:

1984	$3.00 billion
1986	$3.66 billion
1988	$3.90 billion
1990	$4.83 billion
1992	$5.51 billion
1994	$6.72 billion (projected)

Based upon past data, we can project that O & M expenses will double every eight years, with increases between 9% and 11% per year. AMSA's projections of debt service and operation and maintenance needs to the year 2010 indicate that high costs will not diminish in the future.

Household User Fees Double Every Six Years
The increasing needs reported in The Cost of Clean translate directly into increasing burdens for local ratepayers. Through its research, AMSA has found that annual household user fees are now doubling every six years. In 1993, the average service charge for a single family residential user was $199.00.

An additional perspective on this issue is provided by an analysis of service charge increases as compared to inflation. Along with The Cost of Clean, AMSA's soon-to-be published 1993 Service Charge Index reflects an increasing spread between annual increases in service charges (rates) and the rate of inflation reported by the Consumer Price Index. An analysis of the rates reported for the early years of the index and those reported recently reflects the shift in federal policy from the Construction Grants Program to the State Revolving Loan Fund Program. The resulting service charge index for 1993, as an example, exceeds the Consumer Price Index by a factor of nearly three.

Who Pays The Cost of Clean?
One other focus of the report is on who pays the Cost of Clean. Of the current $32.4 billion in 1993-1998 capital needs, only $2.3 billion, or 7.9% of the total is expected to be financed through federal assistance. Currently, local governments, through rates and taxes, carry 84% or more of the capital burden -- in addition to 100% of the sharply increasing operation, maintenance and replacement costs. State funds totalling 7.6% include monies in the revolving loan program, which are ultimately repaid with local funds, increasing the real local burden to over 90%.

One Local Agency's Perspective
To provide some local perspective to this national priority, I'd like to provide a specific example from my area of the country.

In the last two decades, New York City has spent over $2.6 billion to upgrade 11 of its 12 existing plants and to construct two entirely new ones at Red Hook, Brooklyn and North River, Manhattan. These facilities, together with 6000 miles of sewer pipe, enable the City to treat 1.7 billion gallons of water each day. In the next ten years, the City will spend an estimated $5 billion to meet its water pollution program goals, which include secondary sewage treatment, sludge management and combined sewer overflow control. In addition to improving the New York region's waters, these clean water initiatives will create jobs. The upgrading of one plant, Newtown Creek, for example, will create an estimated 2,507 person-years in direct jobs for New Yorkers, together with indirect employment - such as jobs in industries providing goods and

services to Newtown Creek contractors - of approximately 1,120 jobs for a total of 3, 635 person-years in employment. This employment would result in approximately $90 million in wages and salaries for direct employment and $34 million for indirect employment, totalling $124 million.

Federal assistance to cities like New York is crucial. To put the costs of clean water in perspective, since 1980 New York City's combined water and sewer rates have increased by 300%. The City levies a sewer charge covering wastewater collection, treatment and disposal as a function of the water charges assessed on a customer. In 1980, the "rate" for sewer services was 25% of water charges. Today it is 159% of water charges, an increase in the "rate" for sewer service of 536%. When water rate increases are considered, the effective increase in an average customer's sewer charges, i.e., the amount paid each year, the increase is greater than 1000%. Unfortunately, those bearing the greatest burden are residents of low-income, high-density housing, were old and poorly-maintained pipes cause high rates of water consumption. Rate increases also increase the number of in rem proceedings and have a chilling effect on the development of new, greatly-needed additions to the City's affordable housing stock. The replacement of federal funding with additional debt issuance only exacerbates this problem.

In order for cities such as for New york to maintain their economic competitiveness, to prevent further erosion in its viable housing stock, and to avoid the human suffering that results when bills cannot be paid, water and sewer rates must be kept in check. Although cities can do much to cut costs and provide relief to consumers, they cannot be expected to shoulders the entire burden alone. It is no coincidence that New york City's water and sewer rates have spiralled during the same period when the federal contribution to wastewater treatment has declined.

A LOOK AHEAD

The City of New York is not alone in the challenges it faces. All communities face similar obstacles as they work to achieve our collective environmental goals. The price of clean water is indeed high, but we cannot afford to halt the significant environmental progress we have made. What we need is continued federal support.

AMSA believes that the nation must address both its short and long term infrastructure funding needs, and the need for resulting economic stimulus and growth. Recognizing the funding constraints at all levels of government, we urge Congress to look at alternative ways to alleviate the burden on local government. In our view, that worthy goal can be achieved through a reauthorized Clean Water Act that includes the following key elements:

- ***Increased federal funding of our national clean water program***
  To respond to the need for increased federal funding, AMSA has crafted a proposed a Clean Water Act reauthorization funded mandates amendment.

The amendment would fully capitalize the State Revolving Loan Fund (SRF) program within ten years and provide grant funding to correct high priority water quality impairments.

The Administration's Clean Water Initiative estimates that a total authorization of $14.45 billion is necessary to fully capitalize the SRF program and to assure that the program fully revolves at $2 billion per year. The combination of loans and grants contained in this proposed amendment will achieve that milestone, accelerate compliance with Clean Water Act (CWA) mandated requirements, reduce unmet needs, and retain the revolving nature of the SRF by maintaining the corpus of state funds.

The conceptual framework of AMSA's proposed funded mandates amendment includes the following:

- Of the total dollar amount authorized for the clean water program in any fiscal year, up to $1.5 billion annually would be authorized to capitalize the SRF program (over the 10 year authorization for a total of $15 billion for the mandated requirements of the CWA).
- Any amounts above $1.5 billion/fiscal year would be authorized for grants to be allocated at the discretion of the State to address priority water quality problems. The eligibilities for grant monies would be the same as those for SRF loans.

As a nation, we need continued federal funding to both fully capitalize the state revolving loan programs and bolster our efforts through grants. The AMSA funded mandates amendment offers the impetus to encourage all stakeholders in our water quality future to voice persuasive support for action by Congress to increase funding for the national clean water program. The attached legislative language has been drafted to take this positive new direction in the context of H.R. 3948, the Water Quality Act of 1994.

- ***A national program of comprehensive watershed management***
  Reauthorization of the Clean Water Act should establish watershed management as both a viable and appropriate means through which to address water quality concerns and priorities. The measures currently under consideration go a long way to shifting the direction of our national clean water program – away from command and control – and toward a bottom-up, stakeholder driven process. Addressing water quality challenges through watershed management will ultimately result in considerable cost savings to local government and improved ability to protect and improve the environment.

- ***Strengthened Nonpoint Source Controls***
  The reauthorization of the Clean Water Act should significantly strengthen controls on nonpoint sources of pollution. Stronger nonpoint controls will considerably reduce pollutant loading to our nation's waters and improve compliance with existing water quality standards.

- ***Codification of the National Combined Sewer Overflow Control Policy and streamlining of provisions addressing and stormwater management***
  After two years of regulatory negotiations, we have an approved National Combined Sewer Overflow Policy that affords municipalities both the clear direction and the flexibility they have long needed. These key components of the Policy translate into significant cost savings as well (from $160 billion under previous proposals to $41 billion long-term investment under the Policy). The codification of the Policy into law, would put the force of the Clean Water Act behind its essential components. Action by Congress will ensure that the Policy cannot be arbitrarily amended or altered without significant review, and ensure municipalities of the consistency they need to pursue appropriate control strategies. It is also important to provide the nation's cities with the flexibility they need to implement stormwater controls that are both cost-effective and environmentally-sound.

These key elements, within a reauthorized Clean Water Act will save cities money and keep our national clean water program moving forward.

We look forward to working with you, Mr. Chairman, and the Subcommittee, toward this important goal. Thank you for providing us with the opportunity to testify. I will be happy to respond to any questions you may have.

Attachment

AUTHORIZATION FOR CLEAN WATER PROGRAM FUNDING

1. Title VI of H.R. 3948 is amended by adding at the end thereof a new section 606 as follows:

SEC. 606. GRANTS

Section 601 (33 U.S.C. 1381) is amended by adding a new subsection (b), and by redesignating subsequent subsections accordingly, as follows:

"(b) Grants. Of the amounts authorized to be appropriated in each fiscal year under section 607 of this title, an amount of $1,500,000,000 in each fiscal year shall be made available to carry out subsection (a) of this section, and the remaining amount appropriated in each fiscal year shall be made available to carry out high priority water quality projects and activities, identified by the state, and eligible for assistance under Title II."

2. Section 201 of H.R. 3948 is amended to add at the end thereof the following:

(c) Section 205(m)(1) (33 U.S.C. 1285(m)(1)) is amended by inserting after "September 30, 1986" and ahead of the ",", the following "and ending with the fiscal year beginning after September 30, 1992".

DEPARTMENT OF THE ARMY

OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY

(CIVIL WORKS)

COMPLETE STATEMENT

OF

DR. JOHN H. ZIRSCHKY

ACTING ASSISTANT SECRETARY

BEFORE THE

SUBCOMMITTEE ON

INVESTIGATIONS AND OVERSIGHT

COMMITTEE ON

PUBLIC WORKS AND TRANSPORTATION

U. S. HOUSE OF REPRESENTATIVES

INFRASTRUCTURE NEEDS

MAY 4, 1994

WASHINGTON, D. C.

INTRODUCTION

Mr. Chairman and Members of the Committee, I am Dr. John Zirschky, Principal Deputy and currently Acting Assistant Secretary of the Army for Civil Works. I welcome the opportunity to address the Nation's infrastructure needs related to water supply, port development and inland waterways and to address the Army's and Corps of Engineers roles in addressing those needs.

My statement begins with a discussion of the activities and findings of the Corps led effort known as the "Federal Infrastructure Strategy," followed by a discussion of port and inland waterways infrastructure roles and responsibilities of the Army Corps of Engineers. I will conclude with a discussion of the roles and responsibilities of the Army Corps of Engineers related to water supply.

FEDERAL INFRASTRUCTURE STRATEGY PROGRAM

Over the past three years, the Corps has used its infrastructure management and investment analyses experience in addressing a broad range of national infrastructure policy issues. This effort was specifically funded by Congress and is known as the Federal Infrastructure Strategy (FIS). It is a detailed follow-up to the national issues identified by the National Council on Public Works Improvement (NCPWI). This Corps led interagency effort constitutes the first such examination of Federal infrastructure policies from the perspective of the implementation agencies themselves.

The NCPWI's final report, Fragile Foundations (1988), concluded that the Nation's infrastructure was "barely adequate to fulfill current requirements and insufficient to meet the demands of future economic growth and development". There were two major themes to the Council's recommendations: (1) a national commitment, shared by all levels of government and the private sector, to increase capital investment; and, (2) an increased emphasis on performance.

While not all agreed with the recommendation for level of increased capital investments, it was acknowledged that there is a need for greater focus on maximizing the economic efficiency of each investment and increased emphasis on performance.

It is clearly recognized that public works play a critical role in everyday American life, including national security. They are key inputs to economic growth and productivity and, as economic markets are drawn together in a shrinking world, for international competitiveness. Yet infrastructure investments, both capital and maintenance, have been deferred at all levels of

government, often resulting in short-term solutions that left long-term problems while investment priorities were debated. Within this context, the Corps Federal Infrastructure Strategy effort was conducted. It is a three year program that was funded through FY 1993, and will be completed this year with carryover funds.

Based on the advice of the Federal working group convened for the program, the emphasis has been on the nine modes of infrastructure within the three categories of transportation, water resources, and waste treatment and disposal. The aim of the program was not on generating another "needs assessment", but rather on addressing the roles of the various levels of government and the private sector in improving the performance of the Nation's infrastructure.

The program has been a cooperative intergovernmental consultation with other Federal agencies actively participating in the effort. Third party expert groups, such as the Advisory Commission on Intergovernmental Relations (ACIR), the National Research Council, the Civil Engineering Research Foundation, the National Academy on Public Administration, the American Public Works Association and others, were asked to facilitate and organize inquiries into key national issues.

Approximately thirty separate study elements have been formulated with the fundamental goal of using the program as a catalyst to encourage closer coordination among all levels of government. An initial series of interim reports has been published and widely circulated.

Likewise, Federal policy research has now moved beyond the focus on the "financing gap" and the controversy over David Aschauer's findings of a strong link between public investment and economic productivity for two reasons. First, due to the realization that the era of large new capital programs is over, and second, due to the fact that, as Dr. Alice Rivlin, Deputy Director of OMB, stated last year at a National Infrastructure Conference: "There simply isn't any new money available at the Federal level". (Or at any level of government for that matter).

Today, policy development is being driven by three aspects of public works investment:

(1) The need to more consistently apply economic analyses across Federal infrastructure programs to insure that only the most efficient programs and projects are chosen.

(2) The need to focus on low-capital solutions, budget sensitive alternatives, and innovative new R&D products, since there isn't enough money available for business as usual.

(3) The overriding need to improve the performance and better manage what we already have in order to squeeze as much service as we can out of existing facilities.

One of the key program elements of our Federal Infrastructure Strategy was the intergovernmental consultation. This coordination was very ably facilitated for the Corps by the ACIR. Over a two year period, several phases of workshops and interagency coordination were completed involving more than thirty Federal agencies, departments and offices of Congress, along with over eighty organizations representing non-Federal interests.

Based on the consultations, a broad consensus emerged around five national problems that were characterized as essential to the development of an overarching strategy.

(1) Clear national goals for infrastructure need to be articulated by the Administration, and a commitment is needed to support these specific strategic investment goals.

(2) A stable and predictable level of Federal infrastructure funding should be planned, with continued emphasis on improving the economic and environmental payoff of the projects chosen.

(3) Regulatory and administrative burdens in providing infrastructure should be reduced, and flexibility in spending Federal aid and complying with Federal and state mandates should be increased.

(4) Take better advantage of the great potential for new technologies and other products of research to help solve infrastructure problems.

(5) Management reforms are needed to better manage what we already have, such as improved methods and practices focusing on the performance of services (ie., outcomes) rather than on inputs to facilities and operations.

This process culminated in the formulation of an Infrastructure Investment Strategy and Statements of Principles and Standards. The recommended strategy includes elements to assure the President, the Congress, and the people of the United States that Federal spending for infrastructure will go for:

(1) The highest quality investments that yield maximum net benefits;

(2) Life-cycle maintenance planning for existing facilities;

(3) Soundly and equitably regulated projects that efficiently meet environmental and other performance requirements; and,

(4) Affordable facilities that are supported financially by those who benefit from the services provided.

A key goal is the consistent application of performance-based investment criteria by Federal agencies, state and local governments, utilities, and other organizations that Federal agencies assist and regulate.

To insure that the strategy is successfully implemented, an "Action Agenda" was proposed consisting of more than thirty next steps. These include the issuance of Executive Orders and government wide policy guidance, the enactment of a legislative program, and the establishment of a Federal infrastructure policy coordinating mechanism.

The strategy and action agenda were presented at a National Infrastructure Conference sponsored by the Corps and ACIR in July 1993. The findings are documented in a conference report entitled High Performance Public Works: A New Infrastructure Investment Strategy for America and the resulting findings were approved by the ACIR at its February 14, 1994 meeting.

A number of recent Administration actions are consistent with the "Action Agenda" suggested by the Corps proposed Federal Infrastructure Strategy. The most significant of these actions is Executive Order 12893, "Principles for Federal Infrastructure Investments", which was signed by President Clinton on January 26, 1994. The Executive Order covers Federal spending for transportation, water resources, energy, and environmental protection programs.

For capital programs, the order requires a systematic analysis of benefits and costs for "major" infrastructure investments, including both direct spending and grant programs. An annual programmatic investment analysis of capital budget accounts is required with all future budget submissions, beginning with FY 1996. In addition, an investment analysis justification is required of all Administration legislative proposals that would authorize or reauthorize major infrastructure programs. Operation and maintenance activities are considered a form of infrastructure management and are subject to the Order's requirement for a periodic review (at least every five years) aimed at improving the performance of existing facilities.

I would like to bring your attention to the Government Performance and Results Act (GPRA) of 1993. The GPRA has several components, including requirements for each agency to develop and

submit strategic plans, annual program performance reports, and improve managerial accountability and flexibility.

The GPRA utilizes a series of agency pilots to demonstrate and evaluate the implementation of its various requirements. OMB is in the process of completing a second solicitation of pilot applications, the first having been responded to by over 20 agencies and departments. The Army has nominated and OMB has approved a Corps of Engineers performance pilot on the Operation and Maintenance program for civil works projects.

PORTS AND INLAND WATERWAYS

The role of the Army Corps of Engineers in the maintenance and improvement of the nation's ports and waterways dates from 1824. Today the Corps' role in navigation has grown to include responsibility for maintaining and improving over 200 deep draft coastal ports and channels, another 635 shallow draft harbors (both coastal and inland), and nearly 11,000 miles of inland and intracoastal waterways within the fuel taxed system. This responsibility applies to only the waterside elements of port infrastructure and not the landside elements, which would include the docks and related facilities. My discussion of needs will be limited to waterside elements.

Our coastal and Great Lakes ports annually handle over one billion tons in foreign trade and nearly 500 million tons of domestic traffic. Another 600 million tons move on the shallow draft inland and intracoastal waterway system. While over 70 percent of our foreign trade volume is handled through 25 major ports, many critical cargos (such as petroleum products, chemicals, and perishable food) move through dozens of smaller ports as well. The value of seagoing foreign trade cargo alone is estimated at over $450 billion (1990). Billions more are generated by jobs created at the ports and in the inland transportation industries, and in taxes and customs receipts.

Port Infrastructure Needs

The United States is becoming an increasingly open economy with international trade playing a larger role in relation to real Gross Domestic Product (GDP). This trend is reinforced by trade agreements such as NAFTA and GATT. Our foreign trade accounted for less than 10 percent of GDP in 1960. By 1990 the share grew to 22 percent. It is expected to reach over 30 percent by 2000 and nearly 50 percent by 2015. Trade is expected to continue to be one of the strongest sectors of our economy with annual growth of 5 to 6 percent. Our ports are a vital component of this growth. These numbers represent millions of

jobs in our export industries, for producers who depend on imported goods, and for the transportation industry, including our ports.

For the nation to realize its potential growth in the global economy, our ports must continue to be efficient and competitive on a world scale. By the turn of the century nearly 90 percent of the general cargo trade between industrial nations is expected to be containerized. The largest containerships now require 40 feet of channel depth when fully loaded. Many of the larger liquid and dry bulk vessels in the world fleet may require 50 or more feet of channel depth. To reduce transportation costs and remain competitive in world trade, we must have ports capable of accommodating these larger vessels.

Our coastal ports also have an important role to play in national defense. The enormous logistical support required for deploying U.S. troops during the Desert Shield/Storm buildup of 1990-91 illustrates the dependence of the modern military on the civil infrastructure of the United States. More than 4 million tons of cargo were shipped through U.S. ports alone to provide material to troops deployed in the Persian Gulf. Critical ports must continue to be ready to meet strategic needs when they arise.

With passage of the landmark Water Resources Development Act (WRDA) of 1986 and subsequent WRDA's, Congress authorized the Corps to undertake port improvements at 50 coastal harbors and channels. Work has been completed or is nearing completion at nearly 20 locations, including some of our largest port complexes: New York/New Jersey, Baltimore, Norfolk, Charleston, Mobile and New Orleans. Most of these port improvements involve channel deepening and widening to handle the increasingly larger vessels in the world fleet. With the port improvements that are authorized, underway, or completed, we have improved the competitive position of our ports dramatically since 1986. Many of our principal ports on the Atlantic, Gulf and Pacific coasts have or will soon have depths over 40 feet to handle the largest containerships. Each area also has ports that have been deepened further and others will be deepened when economic justification exists. In terms of constructed and/or authorized channel depths, our Nation's ports are now positioned to be competitive well into the next century.

Maintenance and improvement of ports and navigation channels are achieved primarily through dredging. The Corps is responsible for dredging about 300 million cubic yards of material annually on coastal and inland harbors and channels. Determining dredging needs and addressing environmental concerns and the increasing costs associated with dredging and dredge material placement are the key challenges we face over the years ahead in preserving the competitive position of our ports.

Toward this end, we are currently working on a study directed by Congress in Section 402 of WRDA '92. This report will include dredging needs, existing and projected future project depths, types and sizes of ships in use, world trade patterns, an assessment of the future national waterside infrastructure needs, and a comparison of drafts of United States and selected world ports. This report is scheduled for completion by the end of FY 1996.

In addition to the authorized projects in WRDA '86, there was a major change in the mechanism by which port construction, maintenance and improvements are funded. On harbors, local sponsors are now required to cover 50 percent of the cost of deepening over 45 feet, 25 percent of the cost of deepening in the range of 20 to 45 feet, and 10 percent of the cost of deepening for projects 20 feet or less. For all depth categories, locals must also repay an additional 10 percent of the total project cost over 30 years that is initially covered by the Federal government. However, this 10 percent can be partially or totally offset based on the value of lands, easements, rights-of-way, relocations and dredged material disposal sites provided by the local sponsor. WRDA '86 also authorizes local entities to enact user fees that would help recoup their investment.

Cost-sharing has had an impact on the approach and magnitude of port improvements. Many projects are being constructed in phases, with much work deferred until shipping needs justify implementation. In some locations channel widths have been scaled back and one-way traffic implemented to minimize dredging. Besides reducing costs, this also slows the rate at which disposal sites are filled.

WRDA '86 also changed the funding mechanism for channel maintenance of harbors through implementation of an ad valorem Harbor Maintenance Tax. Revenues of the Harbor Maintenance Tax accrue to the Harbor Maintenance Trust Fund (HMTF). Through subsequent amendments, 100 percent of O&M expenditures on behalf of commercial navigation (other than commercial navigation on fuel-taxed inland and intracoastal waterways) are recovered. Transfers from the HMTF are based on the actual expenditures of the previous fiscal year; for example, FY 1994 transfers represent actual Corps O&M expenditures for commercial navigation in FY 1993. Transfers from the HMTF are also authorized for 100 percent of the eligible operations and maintenance costs of those portions of the St. Lawrence Seaway operated and maintained by the St. Lawrence Seaway Development Corporation and for the rebate of tolls collected on that section of the Seaway.

Current and future needs for new channel construction, improvements and maintenance to ensure that our Nation's ports are competitive in the world economy have been estimated.

Existing funding mechanisms, the prioritization and phasing of economically justified improvements, and continued improvements to maintenance procedures should ensure adequate resources to meet these needs for the foreseeable future.

Specific information on current funding level and estimated future funding needs for port/harbor construction and operation and maintenance (O&M) follow.

FY 1993 Funding Levels for Port Construction and O&M

FY 1993 Construction: $108.9 Million (plus another $87.5 million from Non-Federal Sponsors)
FY 1993 O&M: $523.1 Million ($476.9 million on channels subject to the Harbor Maintenance Tax)
FY 1993 HMTF Transfers to Corps for Qualifying FY 1992 O&M Commercial Navigation Expenses: $446.3 Million
FY 1993 Reconnaissance, Feasibility and Planning, Engineering and Design Studies: $26.0 Million

Currently estimated future funding needs in our 10-year outlook (including inflation) are as follow:

For Construction ($ million):

Year	Federal	Other*	Total
1995	148.8	61.6	215.5
1996	294.3	175.6	487.4
1997	235.4	197.7	446.1
1998	284.2	74.1	363.0
1999	239.8	178.7	421.4
2000	228.6	132.2	364.8
2001	196.4	128.6	327.9
2002	302.8	111.4	435.0
2003	425.4	181.7	624.6
2004	317.3	129.9	468.3

*("Other" includes non-Federal required contributions, other non-Federal, and other Federal agency.)

For Maintenance:

Maintenance dredging requirements are more difficult to predict since the impact of storms, river deposition and tidal effects will vary from year to year. But much maintenance dredging is predictable within certain parameters. In terms of current dollars, annual expenditures for O&M have averaged about $516.5 million between 1987 and 1993. We don't anticipate any major changes from historic trends in O&M needs, but we do hope to achieve some savings through improved management of our program and through increased use of simulation models to minimize dredging requirements.

FY 1993 revenues into the HMTF amounted to $650.7 million. Transfers for Corps O&M and St. Lawrence Seaway qualifying expenses amounted to $468.1 million. At current tax rates, HMTF revenues should continue to be adequate to fund qualifying Corps O&M and St. Lawrence Seaway expenditures.

Inland and Intracoastal Waterways Infrastructure Needs

The Army Corps of Engineers has planned, designed, constructed and now operates over 17,000 miles of shallow draft inland and intracoastal waterways (nearly 11,000 miles are in the Fuel Taxed System). These waterways provide the means for privately owned towing companies to transport about 600 million tons of bulk and liquid commodities 300 billion ton-miles each year. Waterway transportation cost savings to shippers are about $8 per ton or almost $5 billion per year. These savings facilitate trading in domestic and international markets and are the basis for a substantial portion of this country's positive balance of payments from coal, grain, and oilseed exports.

From the end of World War II until 1980, waterway traffic grew at about 3.5 percent per year, in effect doubling every 20 years. From 1980 to 1990, ton-miles of traffic grew only 1.3 percent per year. Growth of about 1.5 percent per year is now projected into the 21st century.

Up until the 1970's, the response to larger tows and growing traffic was replacement to some parts of the existing system by larger lock chambers. Other parts are approaching this need, but uncertainty in future traffic growth, affordability, source of funding and environmental acceptability have dampened the pace of lock replacement.

Since the 1970's, fundamentally new institutional arrangements have altered the process to obtain authorization and appropriations for navigation projects. These new arrangements have also altered who pays for construction and rehabilitation of shallow draft navigation projects. A fuel tax on commercial towboats utilizing the fuel taxed waterways was established in 1980 at 4 cents per gallon and increased to 10 cents per gallon by 1986. The Fuel Taxed System encompasses virtually the entire set of shallow draft inland waterways with significant traffic plus the Gulf and Atlantic Intracoastal Waterways.

In addition to authorizing six lock replacement projects, WRDA '86 established the Inland Waterways Trust Fund (IWTF), directed the fuel tax to be deposited in the IWTF, and directed that 50 percent of the lock replacement and rehabilitation projects be paid from the IWTF and 50 percent from Federal general tax revenues. WRDA '86 also redefined the current Fuel Taxed System, provided for regular increases in the fuel tax to 20 cents per gallon in 1995, and created the Inland Waterways

Users Board (IWUB) to prepare an annual report to the Secretary of Army and U.S. Congress recommending investment priorities. The eleven-member IWUB consists of representatives of carriers and shippers using the waterway system. Mr. Berdon Lawrence, Chairman of the IWUB will address their responsibilities on a later panel.

In 1992, a Corps Task Force conducted an assessment of economic investment priorities on the Fuel Taxed System. This study was developed in stages which reflected interaction with the IWUB. One major shift in needs came when traffic growth rates were projected at about 1.5 percent rather than the higher rates reflected prior to 1980. This first stage was based primarily on the rate at which projected traffic approached estimated capacity of each project and identified a potential need for about 70 lock replacement projects by 2020.

The systemic effects of individual locks on the traffic at other locks were not accounted for. This issue was confronted in the second stage where a state-of-the art systems model was tested to determine if it could adequately evaluate the multiple elements of a large system simultaneously. The results of the study were reported to the IWUB at its October 1992 meeting and identified an economically optimal schedule of improvements on the system. The resultant proposals, though reduced from earlier analyses, cannot be financed by the funds likely to be available in the IWTF under its current structure.

Thus, the efforts in defining "needs" have resulted in a difficult and controversial set of alternatives for meeting needs in a funding constrained environment. Some of the alternatives are:

(1) Increasing the fuel tax to provide adequate resources to meet construction and rehabilitation needs.

(2) The IWUB has pressed the Corps to adopt cost saving strategies for construction of lock replacement projects. Lowered costs would enable the funding of more projects within the IWTF limits. A Corps Task Force has identified potential measures which could reduce costs in the range of 10 to 30 percent.

(3) Continue to identify measures that can produce increases in high value capacity, however small, with reasonably low costs. In a budget constrained environment, these provide viable low-cost options with quick payout, even though net benefits from deferred high cost alternatives may be foregone.

(4) The IWUB is pressing for investment criteria which stress quick payout and defer investments that do not produce breakeven returns in the very early years.

(5) Waterway users and the IWUB are pressing for cost recovery from other perceived beneficiaries of the Fuel Taxed System projects. These beneficiaries include recreational boaters and those receiving water supply benefits due to increased firm yields to municipal intakes from pools created by locks and dams.

All of these factors suggest that realistic "needs" for investment in inland navigation projects must be: (1) affordable to those who pay a substantial part of the costs; (2) acceptable environmentally, (3) economically and financially productive; and, (4) high performance investment opportunities. These four investment criteria will cause decision makers to become more conscious of the investment risks which might occur under alternative waterway use scenarios.

All of this places more emphasis on maintaining high performance from existing projects over adding new capacity by lock replacement. Some of the obvious opportunities to achieve higher performance from existing capacity are as follow:

(1) Lock delay costs could be drastically reduced (and the capacity of existing projects increased) if traffic controls were implemented which shift lock arrival distributions from random to uniform arrival rates. Typical lock cycles of 30 minutes can transit 48 tows per day with no delays if tows arrive every 30 minutes. The random arrival of 48 tows a day generates an infinite queue.

(2) If the lock chamber is full for every lock cycle, thruput will be increased by the percentage improvement in chamber utilization.

(3) Ready-to-lock rules could remove the delay penalty to waiting tows created by those tows which must be broken into smaller tows and reassembled after locking. Recently many operators of oversized tows are placing a low-powered towboat in the middle of the tow to expedite multiple cuts.

(4) Continuing improvements in scheduling and implementation of maintenance and rehabilitation outages will be needed. Waterway shippers can adapt to scheduled outages by temporarily increasing inventory levels; however unscheduled outages require a permanent increase in inventory levels and costs.

There are undoubtedly many opportunities for improvements, if the industry and the government find ways to work better together.

Based on the lowered expectations for traffic growth, the Corps could economically justify 20 additional lock replacement

projects along with 12 small scale projects and a $40 million per year rehabilitation program. However, this level of effort cannot be funded with the projected revenue to the IWTF from the existing 20 cent fuel tax.

Given the uncertainty in traffic growth and the existence of severe budget constraints by the IWTF, the first priority for infrastructure investment strategy should be to renew performance of existing projects by careful maintenance and aggressive rehabilitation. In addition, the Corps can implement an aggressive package of small scale measures and jointly, with the industry, implement traffic management measures that will improve system performance.

WATER SUPPLY

National policy currently places the primary responsibility for the development and provision of water supplies with State and local governments and other non-Federal interests. In executing these responsibilities, various Federal programs both support and affect non-Federal efforts. To address the questions raised in the letter of invitation, I will first discuss the status of identification of water supply needs and then the applicable Army authorities and facilities to meet such needs.

From a national standpoint, the most recent water supply assessment was completed by the National Council on Public Works Improvement in 1987. This assessment, however, was not a comprehensive examination of current and future demand, but rather compared previous needs assessments. The study produced a "best estimate" of funding needed for annual water supply needs for each of the next 20 years that ranged between $5.3 and $7.1 billion. It reaffirmed the non-Federal role in water supply and emphasized the importance of management and pricing. It also highlighted the problems that small water supply systems are having.

The last truly comprehensive examination of national water supply demand and needs was sixteen years ago by the Water Resources Council (WRC, 1978). Although various components of the WRC's assessment have been updated by numerous agencies focusing on specific programs, regions, and legislative issues, such studies are constrained by the absence of comprehensive new data. Thus most of the recent work is based merely on either extrapolations of the WRC projections, or on updated data focusing on more narrowly defined issues.

The Corps of Engineers responsibilities relating to the provision of public water supplies stem from a number of different authorities. I will focus on the two primary authorities under which the Corps provides water supply. They

are: (1) the Water Supply Act of 1958 (Public Law 85-500), which authorizes the provision of water supply storage in connection with Corps navigation, flood control, or multi-purpose projects; and (2) section 6 of the Flood Control Act of 1944 (Public Law 78-534) which provides the Secretary of the Army authority to enter into contracts with non-Federal interests for surplus water available from reservoirs under the control of the Department of the Army.

The 1958 Act provides the authority to include M&I water supply storage as part of the construction, operation, maintenance, and modification of a Corps of Engineers navigation, flood control, or multi-purpose project under certain conditions. Such water supply features must be economically justified in conjunction with other project purposes, and must represent the least cost alternative for providing the supply. The project costs allocated to the municipal and industrial (M&I) water supply purpose are borne by the non-Federal sponsor, who must enter into a contract with the Federal Government enumerating the non-Federal responsibilities for all costs allocated to present and future water supply use.

The Corps currently has 11 projects with authorized water supply storage, encompassing over 200 contracts for M&I water supply storage which total approximately 8 million acre-feet.

The 1958 Act does not cover modifications to authorized or existing projects which would seriously affect the project, its other purposes, or its operation. Such modifications require Congressional authorization. Agricultural irrigation is not eligible to be included in a water resources project under the Corps M&I authority unless specifically authorized by Congress. The Corps currently has 66 projects with Congressionally authorized irrigation storage.

The Federal Government makes no representation and assumes no responsibility with respect to the quality or the treatment of the stored water. Water rights necessary for the use of the stored water will not be acquired by the Corps but will be obtained as necessary by the water users.

The 1958 Act was most notably modified by Congress in section 932 of WRDA '86. This section of WRDA '86 increased the non-Federal financial responsibilities for the water supply at Corps of Engineers projects; reduced the maximum period within which non-Federal interests may be permitted to reimburse the Federal Government for the costs allocated to water supply storage from 50 to 30 years; and authorized the Secretary of the Army to permit the full non-Federal contribution of the project (including water supply storage) to be made (without interest) during construction of the project. Subsequent Administration policy for new construction starts required that all construction

costs allocated to water supply storage be repaid during the period of construction.

Under section 6 of the Flood Control Act of 1944 (Public Law 78-534), the Secretary of the Army is authorized to make contracts for surplus water with states, municipalities, private concerns, or individuals at such prices and on such terms as he may deem reasonable. These contracts may be for domestic, municipal and industrial uses, but not crop irrigation, from surplus water that may be available at any reservoir under the control of the Department of the Army. The Corps currently has 24 contracts for approximately 270,000 acre-feet of surplus water storage at twelve projects.

The Secretary of the Army also has authority under Public Law 84-99, as amended, to provide emergency supplies of clean water under certain conditions. One situation is when a locality is confronted with a source of contaminated water causing or likely to cause a substantial public health threat. Work under this authority requires a request from the governor of the state where the source of water has become contaminated, and is usually limited to 30 days.

The other situation allows the Secretary under certain conditions to construct wells and to transport water in response to a request from a farmer, rancher or political subdivision through the state in an area which the Secretary has determined to be drought distressed.

The Secretary is also responsible for the Washington Aqueduct system. This is a unique responsibility and includes the collection, purification and transmission to distribution systems of an adequate supply of water for the following areas: the District of Columbia; Arlington County, Virginia; the City of Falls Church, Virginia; and Federal facilities in the metropolitan Washington, D.C. area, including the Pentagon, National Airport, the Defense Mapping Agency and Ft. Myer. Water distribution is the responsibility of the local governments, except for the Federal facilities in Virginia and Maryland.

Currently, the Washington Aqueduct has the capacity to purify and distribute a maximum of 250 million gallons per day. Although the Federal Government owns, operates and maintains the Washington Aqueduct, the funding mechanism for the facility is under the jurisdiction of the government of the District of Columbia. Funds for operating and maintaining the facility are derived solely from the sale of the water to the municipalities serviced.

Water supply is a long-term problem of national importance. The availability of water, or lack thereof, has already reached critical importance in several areas of the country. There needs

to be undertaken an analysis of the current and future availability of and demand for water supply in this country, including identification of areas where shortages have been or soon will be experienced, such as small communities. Such an analysis has to address what engineering, management and pricing measures are appropriate to meet these needs and their effects on our economy and the environment. The experience of the Corps in executing its responsibilities for water supply, environmental protection and restoration, other water related infrastructure assessment and management, assessment and management of public works infrastructure on military facilities, and leadership of the Federal Infrastructure Strategy Program make it uniquely capable of managing the necessary analyses of water supply needs.

CONCLUSION

I believe the time is right for all levels of government to take the next steps necessary to meet the clear need to improve what matters most, the delivery of services to the American public. Tight budgets and scarce funding for Federal, state and local programs, both capital and maintenance, heighten the need to improve the efficiency of all Federal investments, including those for public works.

While some elements of our public works infrastructure appear to be adequate and resourced for the foreseeable future, others clearly are not. The development of an integrated Federal infrastructure strategy and the publication of Executive Order 12893 are substantial first steps by the Federal government in improving the productivity and effectiveness of our Nation's public works infrastructure. More work remains to be done, but a firm foundation is being laid.

Mr. Chairman, that concludes my statement. I would be happy to answer any questions.

ADDITIONS TO THE RECORD

STATE OF OKLAHOMA
DEPARTMENT OF
TRANSPORTATION
WATERWAYS BRANCH
P.O. Box 660, Tulsa, OK 74101-0660
(918) 838-9933; FAX (918) 832-9074

April 18, 1994

Honorable Robert A. Borski. Chairman
Investigations and Oversight SubCommittee
House Committee on Public Works and Transportation
585 Ford House Office Bldg.
Washington, D.C. 20515

Dear Mr. Chairman:

Attached please find my Testimony pursuant to your Subcommittee hearing on May 4, 1994 regarding the infrastructure needs of the Ports and Inland Waterways of the United States. I respectfully request that this written testimony be included in and made a part of the Congressional Record. Time will not permit my personal appearance at the hearings however, our interest in the subject is genuine and of great interest to our waterway industry in Oklahoma.

Sincerely,

Glen L. Cheatham, Jr.
Branch Manager

cc:
Hon. James Inhofe

AN EQUAL OPPORTUNITY EMPLOYER

TESTIMONY FOR THE RECORD
from
GLEN L. CHEATHAM, JR. - BRANCH MANAGER
WATERWAYS DIVISION
OKLAHOMA DEPARTMENT OF TRANSPORTATION
to
THE CHAIRMAN
INVESTIGATIONS and OVERSIGHT SUBCOMMITTEE
HOUSE COMMITTEE on PUBLIC WORKS and TRANSPORTATION
U.S. HOUSE OF REPRESENTATIVES

Mr. Chairman and members of the committee, I am Glen L. Cheatham, Jr., Branch Manager of the Waterways Division of the Oklahoma Department of Transportation, from Tulsa, Oklahoma.

It is my privilege to present this statement on behalf of the Great State of Oklahoma in support of adequate funding to protect the existing investment inland waterway navigation system of the United States of America. It is my belief that the Federal Government should spend the monies at its disposal for the building and maintenance of this countries infrastructure for the benefit of all Americans, and allow the business's of this great land to operate and provide the jobs necessary for the citizens of the United States.

There is a great need for an additional lock and low water dam to be built at the mouth of the McClellan-Kerr Arkansas River Navigation System near the confluence of the White and Mississippi Rivers. This structure was in fact authorized in the original bill that passed Congress in 1946. The original construction general account is still open for this project. The need and viability of this project has already been established by the U. S. Army Corps of Engineers. This project is needed to eliminate the periods of down time due to low water on the last 10 miles of the system (caused by the Mississippi being low). This project should be federally funded since the structure that was to be built in this location was incorrectly deemed unnecessary by the Corps of Engineers when the project was thought to be complete. Total cost of the project in todays dollars is 167 million dollars. This project was originally named Montgomery Point Lock and Dam and that name has once again been assigned to the current project.

We in Oklahoma and Arkansas have been instrumental in reintroducing the Military Establishment to the inland waterway system as a means to move their equipment and supplies around the country at great financial savings to the DOD budget. There have been about 18 "test" moves conducted since the first one in 1986 here in Oklahoma. In short, the Military Establishment has now

seen that the waterway, when available to the location, is a viable means to move equipment and supplies at great financial savings, on time and no equipment loss or damage to date.

There are several aspects to the military use of the inland waterway system. It relieves highway congestion and therefore increases highway safety. It reduces the amount of pollutants emitted into the atmosphere and conserves energy. By using the waterway it reduces the wear and tear on the equipment. It saves "man days" for the Army and therefore saves money and allows more days of actual training instead of days of driving up and down the highways to and from training camps. Equipment is available and it makes the usual modes of transportation used in the past much more price competitive. Therefore it is only to our best interest to keep the inland waterways system in good operating condition and in good repair.

The commercial use of our waterways is in the best interest of the country as a whole since it keeps freight rates of the competing modes reasonable where the waterway is an alternative shipping mode. What remains to be done is to fully explore the capability and viability of the system and integrate the doctrine into the mainstream day-to-day operation of the DOD. It is now clear that the system is an important national defense assett and has been under utilized.

I appreciate you allowing me this opportunity to enter this testimony into the Congressional Record of the hearings of the committee.

JOHNSTON'S PORT 33
Inola, Oklahoma 74036
(918) 266-5494

Johnston's
PORT 33, Inc.

JOHNSTON TERMINAL
Muskogee, Oklahoma 74401
(918) 682-7883

P.O. BOX 1307
ENID, OKLAHOMA 73702
(405) 233-5800

April 21, 1994

Honorable Robert A. Borski, Chairman
Investigations and Oversight Subcommittee
House Committee on Public Works and Transportation
585 Ford House Office Building
Washington, D.C. 20515

Dear Mr. Chairman:

It is my understanding that we can submit written comments to your subcommittee prior to their hearing on May 4, 1994, regarding the infrastructure needed at the ports and inland waterways of the United States.

I hope that you will submit this as testimony in regards to the Montgomery Point Lock and Dam to be built at the mouth of the McClellan-Kerr Arkansas River Navigation System.

This structure was supposed to have been the first lock and dam when the system was originally passed by Congress in 1946, however the U.S. Corps of Engineers, after design, felt that it was not needed and eliminated its construction. Since that time, their decision, as we can see today, was wrong and the project is needed in order to eliminate the periods of down-time due to the lower water on the last ten miles of the system, caused by the Mississippi being low.

I believe that this project should be federally funded since the structure that was to be built at this location was incorrectly deemed unnecessary by the Corps of Engineers. The Corps made a mistake and they have admitted it. Since the original construction general account is still open for this project, I feel that the federal government should fund it one hundred percent. In business, if a mistake is made, it must be paid for and I see no reason why the Government and the U.S. Corps of Engineers are any different.

Hon. Robert A. Borski
April 21, 1994

It is estimated that the cost at this time would be one hundred sixty million dollars, so it is important that we get on with the project and get it built so that we who have invested in Oklahoma's and Arkansas's inland waterways systems can continue to operate and provide jobs to pay taxes to pay for the Federal Government.

I believe that there is no question in the minds of the users or the Corps of Engineers that this project is needed urgently. I certainly hope that your Committee will recommend federal funding for this project.

Sincerely,

Lew Meibergen

Lew Meibergen

LM:jn

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Chair

JAMES L. OBERSTAR Minnesota
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SANTE ESPOSITO Chief Counsel

U.S. House of Representatives

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

SUITE 2165 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4472

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TO: Members, Subcommittee on Investigations and Oversight

FROM: Subcommittee Staff

RE: Summary of Subject Matter for Investigations and Oversight Subcommittee Hearing on Financing Infrastructure Needs, Wednesday, July 13, 1994, 9:30 a.m., Room 2167 Rayburn House Office Building

The Subcommittee on Investigations and Oversight has scheduled a hearing on July 13, 1994 to examine infrastructure financing. This is the fifth and final hearing in a series of hearings focusing on infrastructure needs. The four previous hearings provided a detailed look at transportation and water-related infrastructure needs, including current spending levels and financing mechanisms. The purpose of this hearing is to identify innovative and alternative infrastructure financing techniques, examine how these techniques work, and explore how they can be further developed to meet our nation's infrastructure investment needs.

Currently, the nation's infrastructure investment needs far exceed our infrastructure spending levels. Budget constraints and competing priorities have made it difficult for Federal, state, and local governments to meet those needs. Since it is

unlikely that these budget situations will improve, the potential for increasing spending is extremely limited. It is also unlikely that other traditional infrastructure financing sources, such as tax-exempt bonds, will meet the nation's infrastructure needs. Many government officials, private corporations, and investment firms are examining innovative and alternative financing techniques as a way to help fund necessary infrastructure projects. Some of the techniques that they are developing and that this hearing will examine include user fees and dedicated trust funds, toll financing, the sale of bonds backed by pension funds, revolving loan funds, public-private partnerships, privatization, capital budgeting, and the establishment of a "national infrastructure corporation."

INFRASTRUCTURE NEEDS AND SPENDING

As a result of the significant gap between our current infrastructure needs and spending levels, there is a considerable backlog of infrastructure projects in need of funding. DOT estimated in 1991 that, in order to eliminate the backlog of projects, $212 billion would be needed for highways, $78 billion would be needed to repair bridges, and $18 billion would be needed for transit. In order to maintain conditions and performance for highways, bridges and transit systems, an average annual capital investment of $55.5 billion would be needed. In 1991, only $36.4 billion was spent from all levels of government on these infrastructure needs.[1] This results in a shortfall of

[1]Downey, Mortimer. Oral testimony before the Subcommittee on Investigations and Oversight, House Public Works Committee, March 21, 1994, pp. 13-14.

$19.5 billion. Since the funds are not available to address the backlog and maintenance needs, the funds are even more scarce for the enhancement of infrastructure projects. The average capital investment needed to improve conditions and performance is $73.7 billion.

This gap between needs and spending is also prevalent in aviation infrastructure. Airports that are eligible for federal funding need approximately $7 billion per year. Federal funds, passenger facility charges, and local capital only amount to an annual expenditure of $6.2 billion. This results in a $800 million shortfall per year for aviation infrastructure projects. This shortfall is resulting in substantial flight delays at 23 airports. This figure will increase to 33 airports within the next 10 years if this pattern of spending continues.

Environmental infrastructure is also a victim of funding shortfalls. EPA projects that $137 billion is currently needed to meet future wastewater treatment needs, and that the amount needed will grow in the future. EPA estimates that the $10 billion spent annually on wastewater treatment will not be sufficient to meet these growing needs. Approximately $7.9 to $8.2 billion will be needed each year to implement the Safe Drinking Water Act -- about $1.4 billion to $1.7 billion more per year than is spent now. The American Association of Port Authorities estimates that ports need $3.2 billion each year to meet their infrastructure needs. Unfortunately, an average of only $1.1 billion per year is expected to be invested in ports over the next five years.

The Commission to Promote Investment in America's Infrastructure estimated that the public sector spends more than $140 billion per year on all domestic infrastructure. Other infrastructure studies estimate that this still results in a shortfall of $40-$80 billion annually. The development of innovative and alternative financing techniques will help eliminate this shortfall and help finance the nation's infrastructure needs.

FINANCING TECHNIQUES

Since our current infrastructure funds will not meet the needs of maintaining, improving and expanding our existing and future infrastructure, other financing methods can help solve the problem. Efforts are underway to develop and improve techniques such as user fees and dedicated trust funds, toll financing, the sale of bonds backed by pension funds, revolving loan funds, public-private partnerships, privatization, capital budgeting, and the establishment of a "national infrastructure corporation."

User Fees and Dedicated Trust Funds

Many infrastructure projects are financed through user fees. User fees are charges paid for by people who wish to benefit from a public facility. The revenue that is generated from user fees is usually placed into a trust fund that finances infrastructure needs.

Passenger Facility Charges (PFCs) are an example of a user fee. In 1990, Congress passed the Aviation Safety and Capacity Expansion Act which authorized airports to impose departure taxes on airline passengers. These taxes, called Passenger Facility Charges (PFCs), must be used to enhance the safety, capacity, or security of the air transportation system, promote competition, reduce noise, or expand passenger facilities. Airports may collect between $1 and $3 per passenger for an originating or connecting flight, with a cap of $12 per round trip. These charges are only imposed when there is a specific project at the airport in need of funding.

User fees not only provide services for those who wish to pay for them. They also inhibit the need for infrastructure expansions. For example, several toll roads use "congestion pricing" whereby prices are higher during rush hour. This use of variable pricing reduces the demand and can avoid the need to add lanes. The reduction in demand also increases the amount of time the facility has before it is in need of repair or replacement.

The National Utilities Contractors Association (NUCA) is exploring the use of user fees to finance environmental infrastructure needs. NUCA suggests that user fees based on water consumption, water discharge, one time hook-up fees or permits for new construction could be used to set up an environmental trust fund. This fund would provide money to finance water and wastewater infrastructure projects. It would be similar to the Highway Trust Fund, but it would be off-budget.

Toll Financing

The use of tolls to finance the construction, operation, and maintenance of roads, bridges, and tunnels is not a new concept. In fact, toll financing has been used to finance roads since the 1700s. Even though this is an old technique, this user-fee type of financing has evolved over time to include some innovative aspects.

In the past, states and local governments were not able to use federal funds on projects where revenues would be generated by tolls. The 1987 Surface Transportation Act helped to change this by providing a pilot toll program that allowed selected states and localities to build toll roads which had received as much as 30 percent of their financing from federal funds. DOT approved eight projects for this program. The Intermodal Transportation Efficiency Act of 1991 (ISTEA) further expanded the use of toll revenue. States and local governments now can get credit for their non-Federal share under Section 1044 by using the toll revenue to match and leverage federal aid.

ISTEA also permitted private entities to construct, operate, maintain, and improve toll roads. In return, the private investors are allowed to use the revenue that is generated to pay off the costs associated with the project, in addition to keeping any profits. This can be done even if the road is sponsored by private entities. As a result of these recent legislative changes, more funds are available for infrastructure projects.

Toll financing initially involves raising capital in order to start the project. Funds can be generated by a variety of means such as by issuing bonds, using toll revenue grants, or by using private funds. Once the road, bridge, or tunnel is in operation and tolls are collected, the revenue generated can be used to pay for the debt, operation, maintenance, and improvements of the project.

There are many advantages to using toll financing to fund infrastructure projects. First, toll roads, bridges, and tunnels are usually built faster than traditionally financed roads, bridges, and tunnels because complete funding is available at the start. Second, toll roads tend to be better maintained and have better facilities, like restaurants and rest stops, to attract travelers. Third, tolls are paid for by the users. Travelers who do not enjoy the benefits of the road do not have to help pay for it. Finally, many toll roads, bridges, and tunnels may be able to use a demand-management system whereby variable pricing could be used. Prices would be higher during peak rush hours and less during off-peak hours, so the total amount of infrastructure needed would be reduced.

There are several disadvantages that make investors, builders, and private industry hesitant to use toll financing. First, additional funds are needed to cover the debt from the time when the road, bridge, or tunnel opens until it begins to cover the debt. Second, toll revenues could be reduced if a competing road, bridge, or tunnel that is less expensive to travel were built in the area. As a result of the uncertainty of revenue projections and the long-term operating risks, financial investors have been reluctant to

commit to these types of projects. This attitude is beginning to change as more roads, bridges, and tunnels are financed by the use of toll revenues.

Pension Funds

Many groups have been exploring the use of pension funds as another technique to finance infrastructure projects. According to the Employee Benefit Research Institute, private pension funds held $2.42 trillion in assets at the end of 1992, compared with $988 billion in state and local pension funds. If a suitable market for pension funds were created, these assets could offset shortfalls in infrastructure spending.

To date, pension funds have not been used to provide funds for infrastructure projects in the United States. Public authorities that seek to finance infrastructure projects are generally entitled under federal law to issue bonds whose interest is tax-exempt. Tax-exempt bonds can pay lower interest rates than taxable bonds, so public authorities normally finance their projects with tax-exempt bonds. Pension plans are already exempt from taxation, so they have no interest in buying tax-free bonds when they can buy taxable bonds earning a higher interest rate. Since it is in the best interest of developers to obtain financing with lower interest rates, infrastructure sponsors seeking to attract pension fund investors will need to make taxable bonds more attractive to offset the difference between the rates. Infrastructure developers are working to develop this technique, in addition to several others, to facilitate pension fund investments in infrastructure.

While using pension funds may appear to be a good alternative financing mechanism for infrastructure financing, many plan participants and retirees are concerned that investments in infrastructure will place their pensions at risk. Advocates of this approach argue that contributions are voluntary, that the investments are judged against other available investment options, and that they are subject to the same legal requirements as all other investment plans.

State Revolving Loan Funds

State Revolving Loan Funds (SRFs) were created by Congress in 1987 to help communities meet their wastewater infrastructure financing needs. SRFs offer low and no interest loans to these communities. Both the terms and the financing for these loans vary from state to state.

There are many advantages to using SRFs in comparison with traditional grants. First, the loans provide assistance to more projects. Debt service payments, state matching funds, and additional funds that can be leveraged create a larger pool of money than traditional grants. The revenue generated from the loans will return to the fund to finance other projects, whereas the grant money can only serve a limited number of projects based on the amount of the federal contribution. SRFs also help control the Federal deficit by gradually reducing the need for future federal contributions. Grants need continuous federal contributions. SRFs are also more efficient to manage because the do not involve the federal supervision associated with the administration of grants.

Since SRFs can fund the total cost of most projects, projects progress much faster, which results in reduced overall project costs. Finally, the fact that the money has to be paid back means that sponsors are more likely to focus their resources on the projects that are most needed.

Public-Private Partnerships

Shortfalls in infrastructure spending provide an opportunity for public-private partnerships whereby both parties can gain substantial benefits. The private sector can benefit by gaining investment opportunities and work and the public will have more resources to devote to other construction projects.

Public-private partnerships are becoming increasingly popular. Many government officials realize that a large burden of the construction, repair, operation, maintenance, and funding of infrastructure projects can be lifted by involving private parties. The State of Washington has been very active in encouraging the involvement of private parties in their infrastructure projects. The Washington State Department of Transportation (WSDOT) solicited state developers for infrastructure projects that would be suitable for partnerships. WSDOT received 14 proposals from 11 private consortiums. Six of these proposals will ultimately be selected to participate in the State's new public-private partnership program. Some public-private partnerships for these projects may involve the community leasing its rights-of-way and air rights to developers. WSDOT will release more information on these partnerships once the six

projects have been selected.

EPA has also been focusing on public-private partnerships to help meet some of its infrastructure needs. EPA's Partners Rebuilding America program is encouraging public-private partnerships in wastewater finance. Under this program, communities, counties, and special districts have the opportunity to sell or lease wastewater treatment plants to private entities. The private entities can then own or operate the facilities and keep the revenue. The local government can use its funds for other infrastructure projects. Alabama and Massachusetts have taken advantage of this partnership and both have found that the privately-owned wastewater treatment facilities cost less to operate.

There are a variety of other joint public-private funding alternatives being developed for the design, construction, maintenance, and improvement of infrastructure projects. Many states and federal agencies are exploring the use of developer fees, special taxes such as motor vehicle registration fees, and local sales taxes to help finance infrastructure needs.

Privatization

Instead of using public-private funding alternatives, many people are advocating privatization, whereby private firms will be solely responsible for delivering public services or operating and maintaining public facilities. State and local officials in addition to private interests like this funding technique for several reasons. First, it stretches

limited resources further to help meet infrastructure needs. Second, taxes do not have to be increased to provide for the needed public service or facility. Third, it reduces the tendency to finance "pork barrel projects" and it focuses more attention on infrastructure needs that are priorities. Critics of privatization claim that it creates a monopoly for some public services or facilities. Also, some disadvantaged citizens may not be able to afford the fees of a public service or facility that was once funded by tax revenue.

Public services or infrastructure needs can be privatized by several means. A government agency can contract with private companies to provide the services or needs. A government entity can allow a private firm to construct and operate a facility, such as a toll road or sewage treatment plant, with the understanding that the firm can keep any profits and that ownership of the facility will revert back to the government entity after the debt has been paid. The debt usually averages between 20 and 30 years. Finally, the government can sell an asset, such as a railroad, to a private firm.

Capital Budget

Capital budgets are currently used by virtually all other countries and state governments in the U.S. Since these budgets make it easier to finance long-term infrastructure projects, many investors, builders, and government agencies are advocating a federal capital budget for infrastructure projects.

Our current federal budget consists of capital spending and operating or current spending. Capital spending buys goods that have long term benefits, like infrastructure projects. Capital budgets use debt and current revenues to finance needs. For example, local governments issue bonds to finance a road project. The cost of the project is noted in the capital budget and is offset by funds received from the sale of bonds. Only the debt service paid to retire the bonds is recorded in the operating budget. Operating or current spending pays for annual expenses, like Social Security payments.

Advocates of a capital budget for infrastructure projects claim that this type of budget will enable the U.S. to finance large infrastructure projects over the long term rather than being limited to the yearly, short-term budget cycle. The budget can reduce construction delays because it ensures that the funding for a project will be provided over a specified amount of time and for a specified amount of money. A capital budget will make it easier to monitor purchases and the issuance of debt for long-term projects. In addition, this budget can help establish national priorities for infrastructure investment. Advocates state that infrastructure needs will be looked at as a whole and projects that need the funding the most will receive it, regardless of geographic or political considerations.

Critics who oppose the creation of a capital budget claim that this type of budget will encourage excessive public works spending. Since projects will be funded up front, critics fear that a "buy now and pay later" philosophy will mislead people into believing

that the country can afford these projects. This may reduce the concern over the federal deficit. Critics also claim that many other spending needs, like educational spending, will be placed in the capital budget, on the grounds that they are "human capital" investments, when they really belong in the operating or current budget. As a result, many political decisions will have to be made concerning what spending qualifies for a capital budget and what spending qualifies for an operating or current budget.

National Infrastructure Corporation

Another alternative financing technique is to develop a National Infrastructure Corporation. This technique was proposed by the Commission to Promote Investment in America's Infrastructure, established by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (P.L. 102-240, Section 1081). This Commission was established to examine various funding mechanisms for infrastructure projects. The Commission, in its report entitled Financing the Future, recommended creating this National Infrastructure Corporation to "leverage Federal dollars and boost investment in infrastructure projects with a capacity to become self-sustaining through user fees or dedicated revenues." The Corporation would serve as a federally chartered financing intermediary to offer financial assistance and technical advice to infrastructure projects. The Corporation would have an infrastructure insurance company as a subsidiary to provide insurance and reinsurance to issuers of debt on infrastructure projects. The Corporation would also offer a development insurance service that would reduce the risk of losing money during the pre-construction phase. This insurance would help encourage private entities to invest in

infrastructure projects. The proposed National Infrastructure Corporation would also offer federally guaranteed loans to attract retirement funds.

Ultimately, advocates of this idea would like to see the Corporation serve as a repository and manager of infrastructure trust funds. This would eliminate the political pressure to use trust fund monies to pay for the federal deficit. The bank could also be responsible for evaluating and funding transportation demonstration projects.

The Infrastructure Reinvestment and Economic Revitalization Act of 1993

Subcommittee Chairman Borski introduced H.R. 3489, the Infrastructure Reinvestment and Economic Revitalization Act of 1993, on November 10, 1993. The purpose of this bill is to create a new off-budget financing mechanism to provide a more immediate source of money to finance surface transportation infrastructure needs. H.R. 3489 would create a trust fund to be known as the "Infrastructure Reinvestment Fund." The bill seeks to amend the Internal Revenue Code to require the Secretary of the Treasury to transfer money from the Highway Trust Fund into the Infrastructure Reinvestment Fund. The funds will be transferred from time to time based on the Secretary's discretion, and the amount will be equivalent to the 2.5 cents per gallon on motor fuels added by the 1990 Omnibus Budget and Reconciliation Act. Money in the Infrastructure Reinvestment Fund would be used to issue bonds to quickly finance surface transportation needs.

HEARING AGENDA

The following witnesses will present testimony at the Subcommittee's July 13th hearing on Infrastructure Financing:

PANEL I : Federal Officials

* Ms. Louise F. Stoll
  Assistant Secretary for Budget
  Co-Chair
  Innovative Financing Task Force
  U.S. Department of Transportation

* Ms. Jane F. Garvey
  Deputy Administrator
  Federal Highway Administration
  Co-Chair
  Innovative Financing Task Force
  U.S. Department of Transportation

* Mr. Michael B. Cook
  Director
  Office of Wastewater Enforcement and Compliance
  U.S. Environmental Protection Agency

PANEL II : State and Local Officials

* Mr. Joseph Bendel
  Council Member
  Mc Keesport, Pennsylvania
  President
  Pennsylvania League of Cities

* Ms. Terry Agriss
  President
  New York State Environmental Facilities Corporation
  President
  Council of Infrastructure Financing Authorities

PANEL III : Financial Experts

* Mr. Daniel V. Flanagan, Jr.
  Chairman
  The Commission to Promote Investment
  in America's Infrastructure

* Mr. Felix G. Rohatyn
  Senior Partner
  Lazard Freres and Company

* Mr. Joseph M. Giglio, Jr.
  Senior Advisor
  First Southwest Company

PANEL IV : Builders

* Mr. William H. Allen
  Principal
  Dewberry and Davis
  Representing
  American Road and Transportation Builders Association

* Mr. Richard Foster
  Chairman
  Government Relations Committee
  National Utilities Contractors Association

* National Association of Home Builders

SUBMITTING TESTIMONY FOR THE RECORD

* Ms. Jerry A. Ellis
  Economic Development Director
  Washington State Department of Transportation

* Ms. Judy Mares
  Financial Executives Institute
  Committee on Investment and Employee Benefit Assets (CIEBA)

* Airports Council International - North America
  & American Association of Airport Executives

* Mr. Michael Crane
  Dulles Greenway
  Loudoun County, Virginia

INFRASTRUCTURE FINANCING

WEDNESDAY, JULY 13, 1994

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT,
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION,
Washington, DC.

The subcommittee met, pursuant to call, at 9:50 a.m., in Room 2167, Rayburn House Office Building, Hon. Robert A. Borski (chairman of the subcommittee) presiding.

Present: Representatives Borski, Inhofe, Duncan, Gilchrest and Mineta (ex officio).

Mr. BORSKI. The subcommittee will come to order. The subcommittee today will be examining the potential for innovative and alternative financing methods to provide new sources of funding for infrastructure investments.

This hearing is the fifth in a series of hearings the subcommittee has held to review whether existing funding has been adequate to meet the nation's vast infrastructure needs.

Testimony from all levels of government and from all regions of the country has shown that our infrastructure investments are far too low. With traditional grant programs playing a smaller and smaller role, we must develop reliable and continuing sources of funds for future investments.

There has been no question raised in these hearings about whether we need additional infrastructure investment. There is a widespread consensus that added infrastructure investment is needed to improve the quality and standard of living. The foremost question has been where we will find the billions of dollars that are needed for our roads, transit systems, airports, wastewater treatment systems and water supply systems.

I have long been an advocate of using the financing mechanisms of the financial markets to increase the funds available for infrastructure. Private companies use many different methods of raising funds for investment—and the Federal Government should do the same.

Existing government programs are resistant to change, to innovation and to long-term planning for future needs. Instead of preparing for future needs, as successful corporations do, we have been lurching from crisis to crisis.

It is time for us to broaden our vision and develop new and alternative methods of infrastructure financing.

In today's hearing, we will hear testimony from numerous witnesses with plans and ideas for increasing the funds available for infrastructure investment.

There may be no magic bullet that will provide the solution for our funding problems. The key point is that there are alternatives which should be made available for infrastructure projects.

Today's hearings will provide some proposals that will help our Nation meet its infrastructure needs. There is simply no question that we can and should do better. If we can't provide the money with the existing programs of Federal grants we must find another way.

The distinguished gentleman from Oklahoma, Mr. Inhofe.

Mr. INHOFE. Thank you, Mr. Chairman. As always, I commend you on your efforts to educate this subcommittee on important issues within our jurisdiction. Infrastructure financing is perhaps the most difficult of those issues. We all agree we have massive infrastructure needs that must be addressed. However, how to finance these pressing needs has yet to be answered.

I hope our efforts today will provide us with a framework for some future discussions. City leaders and State officials need several financing tools available to them if they are going to adequately respond to these needs. As a former mayor of a major city, I have struggled firsthand with this problem.

In Tulsa, we had success in private-public partnership efforts. In fact, we led the Nation according to most of the leaders at that time, in coming up with creative ways to meet our needs, but that is not going to be able to resolve the problem in a national perspective so I thank you for having these hearings.

[The prepared statement of Mr. Blackwell follows:]

Statement of
Congressman Lucien E. Blackwell
Before the
U. S. House of Representatives
Committee on Public Works
And Tranportation
Subcommittee on Investigations and Oversight
Wednesday, July 13, 1994

Mr. Chairman, I would like to begin by applauding your bold leadership in the matter of examining alternative methods of financing our Nation's Infrastructure needs. In this fifth and final hearing in a series of hearings focusing on infrastructure needs, it is clear, that while the four

previous hearings focused on looking at transportation and water-related infrastructure needs, this hearing seeks to identify innovative and alternative infrastructure financing mechanisms. As one solution, Mr. Chairman, I note the legislation that you introduced, H.R. 3489, goes a long way towards providing a more immediate source of money to finance our surface transportation infrastructure needs. It would amend the Internal Revenue Code to require the Secretary of the Treasury to transfer money from the Highway Trust Fund into the Infrastructure Reinvestment Fund. These funds would be used to issue bonds to quickly finance surface transportation needs. Solutions like these, Mr. Chairman assume the high road, of looking for

answers instead of engaging in political rhetoric, with no satisfactory conclusion.

Budget constraints and competing priorities require us to find different ways of doing business. For that reason, I am excited about the distinguished panelists and testimony before us today.

Mr. BORSKI. I thank the distinguished gentleman. I would like to welcome our first panel this morning. Louise Stoll is Assistant Secretary for Budget and Co-chair of the Innovative Financing Task Force, U.S. Department of Transportation; Ms. Jane F. Garvey, Deputy Administrator, Federal Highway Administration, and also Co-chair of the Innovative Financing Task Force, and Mr. Michael B. Cook, Director, Office of Waste Water and Compliance, U.S. Environment Protection Agency. I ask you all to please rise and raise your right hands.

[Witnesses sworn.]

Mr. BORSKI. Thank you very much.

Ms. Stoll, I would like to remind everyone that your entire presentation will be made part of the record and you may proceed.

TESTIMONY OF LOUISE F. STOLL, ASSISTANT SECRETARY FOR BUDGET, COCHAIR, INNOVATIVE FINANCING TASK FORCE, U.S. DEPARTMENT OF TRANSPORTATION; JANE F. GARVEY, DEPUTY FEDERAL HIGHWAY ADMINISTRATOR, FEDERAL HIGHWAY ADMINISTRATION, COCHAIR, INNOVATIVE FINANCING TASK FORCE, U.S. DEPARTMENT OF TRANSPORTATION; AND MICHAEL B. COOK, DIRECTOR, OFFICE OF WASTEWATER MANAGEMENT, OFFICE OF WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY

Ms. STOLL. Thank you, Mr. Chairman. Mr. Chairman and Members of the subcommittee, I am really pleased to be here before you today to continue this discussion on the condition of our Nation's transportation infrastructure. I and my colleague, Jane Garvey, the Deputy Administrator of the Federal Highway Administration, will describe today the steps DOT is taking to utilize Federal transportation dollars more effectively to address the disparity between the needs and current investment in America's transportation system. This administration has moved expeditiously to do this.

In January of this year, the President issued Executive Order 12893 on infrastructure investment. This mandate required rigorous cost benefit analysis for Federal investment in infrastructure projects, more effective management of our infrastructure and increased private participation in its financing.

In February, Secretary Peña issued his strategic plan which identified infrastructure investment as a primary goal of the Department.

In March, the Secretary established the Task Force on Innovative Financing for Infrastructure Investment that Jane Garvey and I co-chair. Shortly thereafter, Rodney Slater, Administrator of the Federal Highway Administration, solicited pilot projects from the States' transportation departments. By April, project proposals were received from all over the country and for the past two months we have been evaluating these projects, working with their sponsors and testing their appropriateness to move forward.

I applaud this subcommittee's initiative for addressing the complex and yet important issue of needed transportation capital investment. These hearings underscore the significance of transportation infrastructure to our economic vitality and the effect that its operational efficiency has on the price and availability of goods both at home and in markets abroad. The hearings have also high-

lighted the nature of the public trust we hold: Americans expect their roads, airports, rail and transit systems to work and to work well, and they hold us accountable if that doesn't happen.

In previous testimony before this committee, DOT officials have reported the degree of underinvestment in the Nation's transportation infrastructure. The gap between Federal revenues available for investment and those needed to maintain the condition and performance of the system results in a backlog of unaddressed needs: Highway pavement reconstruction, airport facility improvements, inadequate capacity and bridge and transit deficiencies.

Consequently, our transportation system's performance is affected by long delays and traffic congestion. Highway congestion in 50 of our Nation's most populous urban areas costs our nation almost $40 billion a year in fuel wasted and lost productivity. Air traffic delays are escalating: 23 airports are already experiencing delays of more than 20,000 hours per year and this is worsening annually.

Available resources continue to fall short of the $55.5 billion per year needed from all sources, Federal, State, local, to maintain our highways and transit systems and the $7 billion per year needed for airport capital improvements. With a five-year outlook of deficit reduction and straight-line budget caps on discretionary spending, Federal infrastructure investment is not likely to grow substantially.

The vehicle of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the administration's 1995 budget requesting full funding of the core programs of ISTEA are important steps forward. We hope that this 1995 budget request receives support from each of you, in the final stages of its deliberation.

The President's Executive Order requiring rigorous cost benefit analysis and better management of infrastructure facilities further advances our efforts to both invest strategically in, and maximize the effectiveness of our infrastructure. We will exploit the flexibility that exists in ISTEA to utilize and leverage Federal funds to speed up investment and, as a Nation, benefit from the economic return of having an efficient distribution system for people and goods.

All of this helps: Strategic investment; careful management of operations and facilities; a good legislative foundation for Federal funds; a comprehensive approach to helping States and Metropolitan Planning Organizations use the flexible financing potential available to them. The common goal is to increase the investment capital available to transportation in order to drive the economy forward by attracting private sector investment and additional local investment and leveraging the availability of Federal funds.

Although we have moved into high gear with innovative financing alternatives, these approaches and tools are not new to the Federal Government. Financing techniques were used to foster joint development projects with both public and private participants involving private bond financing. Transit properties in areas such as Washington, DC, Dade County, Florida, and New York City used joint development to help finance the construction of new rail station facilities. This technique involved a commitment of private dollars to construct public infrastructure, such as a portion of

a new transit system or rail station, in exchange for the rights to develop on or around the new facilities.

In addition, toll roads and bridges and their State and locally-owned roads were financed by leveraging private capital. Credit enhancement techniques involving the Federal Government have also had a positive effect in stimulating new bond issues for infrastructure. The San Diego Metropolitan Transit Development Board, for instance, dedicated future Federal transit Section 9 funds as a credit enhancement to back the issuance of bonds for the purchase of new buses.

The San Joaquin Hills Transportation Corridor Agency, on the other hand, received $1.2 billion in bonds for a new toll road backed by toll revenues. A Federal guarantee of a backup line of credit to pay debt service was extended to cover the first five years of operation of the toll road, a start up period when toll revenues might be insufficient to service debt. These are just some examples of the instruments that are available and have been used successfully, but not widely, to involve the private sector in helping build the transportation infrastructure.

With the passage of ISTEA of 1991, the States were given additional flexibility for funding their surface transportation capital programs. The act provided new revenue options in the form of tolls; a waiver of State match; an ability to use toll revenues that are generated and used by public, quasi-public, and private agencies as the match to Federal highways and transit funds; and the ability to recycle transportation-related grant funds through a State highway revolving fund, to be used to further highway and transit projects.

ISTEA also allowed greater private involvement in building, maintaining, and operating toll roads and bridges, and allowed Federal funds to be spent on private toll roads. It gave the States unprecedented flexibility in using the Federal highway and transit funds they received based on their own priorities.

To date, for instance, over $1 billion of Federal Aid Highway funds have been flexed; that is, used for public transit projects. State transportation departments have been strong supporters of the flexibility provided by ISTEA, and have demonstrated an increase in its applications.

Unfortunately, they have been less interested in using its innovative financing provisions. They have reported concerns about several issues including the complexity of the new ISTEA-provided opportunities, impacts of State laws and regulations and the effects of environmental and planning requirements.

Further, we understand that some States are concerned about their ability to issue tax free bonds if they want to enter a management contract with a private entity to operate a toll facility. Current tax codes limit the term of such management contracts to five years.

To address these issues, we in the Department of Transportation embarked upon an extensive outreach and education effort to simplify for States the use of ISTEA provisions. The goal was to make the role of Federal funds more effective in leveraging additional dollars from other sources. The Federal Highway Administration, for example, issued a handbook,"Guidance for State Implementa-

tion of ISTEA Toll Provisions in Creating Public-Private Partnerships", to the States with practical guidance on how to carry out the law and suggested language for changes in State laws to allow both private equity capital and debt to finance projects. In addition, we have held a number of symposia to highlight and discuss existing barriers to public-private partnerships and to assess the use of the law.

Secretary Peña realized that if we were to expand the uses of infrastructure funds and the available capital for infrastructure investment, we had to make the ISTEA process clearer to the States and the specific projects more attractive to the private sector.

As a primary player in transportation investment, the Federal Government would act as a catalyst in leveraging additional State and private capital to reduce the infrastructure deficit. To initiate this effort, Secretary Peña formed a task force now co-chaired by me and Jane Garvey, Deputy Administrator for FHWA. We were charged with spearheading an approach to infrastructure financing that cut across all transportation modes and would better leverage traditional grant programs, attract new capital and create a reliable funding program, given constrained Federal budget resources, for America's transportation system.

In the Department, we have educated ourselves through a series of seminars on financing techniques to foster a better understanding of how the private markets work; and we have began to create a common vocabulary across the modes and throughout the Department so we can address the full spectrum of transportation projects because each mode has a different name for the various aspects of its grant and financing program which is in itself an inhibition to dealing with the outside market. We have reviewed case studies to learn from their financial failures and successes.

The Department of Transportation's Task Force is exploring the feasibility of various techniques such as using Federal grant funds as a capital reserve or to buy bond insurance, provide loans which might be repaid based on interest only for the first several years, and allow short-term lines of credit using Federal dollars collateralized by future apportionment monies within a State.

At the policy level, we are reviewing with each mode administrative, regulatory and legislative processes to eliminate obstacles which may limit a State's ability to develop financial solutions to capital financing under ISTEA. We are also developing specific promising financing approaches for select capital projects. Our intent is to develop a cadre of success stories, projects which have gone through the ISTEA planning process and been advanced to construction sooner than would have otherwise been the case, because we have been able to effectively leverage Federal funds and/or through the infusion of new capital.

Each modal administrator with an infrastructure program has, in turn, as part of our initiative, established an Infrastructure Finance Task Force paralleling the Department's Task Force, of upper level, interested people to examine the unique circumstances of the mode, including impediments in law, practice or habit to attracting outside capital. We have asked these modes to remove, within the existing law, obstacles that the Federal Government may inadvertently be laying in the path of investment arrange-

ments. In addition, each mode, in consultation with its regional offices, transportation providers and industry, has developed a list of projects as candidates for innovative financing techniques and, for each, we are working to develop a strategy to carrying the projects forward.

In the process, we have invited Governor's offices and State Treasurers to join our efforts and work with the traditional transportation providers and interest groups in thinking creatively about financing their infrastructure needs. Many States are, in fact, pushing the envelope and implementing innovative approaches to infrastructure investments.

Virginia, California, Missouri, Arizona, Florida, Washington, Minnesota, Pennsylvania, and Texas, for example, have moved to enhance the potential for public/private partnerships, including passage of laws to allow such partnerships.

While many States are focusing first on highways and looking to expand traditional toll systems, some States, notably Washington State, have included transit, maritime, rail and airport projects in their approach. Most States are seeking to involve the private sector to a greater extent to order to bring new capital into the field.

Federal, State and local Governments share the responsibility in ensuring that the infrastructure is adequate to meet the Nation's critical transportation needs. A 1 percent improvement in overall efficiency of our transportation system translates into $100 billion in savings across the economy within a decade, with improved safety and a better quality of life for all Americans.

ISTEA made many more projects possible and gave the States unprecedented flexibility in their application of alternative financing instruments. Secretary Peña and the Department are now capitalizing upon this flexibility.

This Innovative Financing Action Plan is not, I repeat, not a replacement of Federal participation. The Federal commitment must remain strong and consistent as the cornerstone of the Plan, but rather it is an augmentation of the Federal financing assistance program to enable us truly to build America for the 21st century.

Thank you.

Mr. BORSKI. Thank you, Ms. Stoll.

Ms. Garvey, let me unfortunately stop the proceedings for a call to the House and the subcommittee will return in five minutes.

[Recess.]

Mr. BORSKI. Ms. Garvey.

Ms. GARVEY. Thank you, Mr. Chairman. I am very pleased to be here this morning with Assistant Secretary Stoll to testify before you on infrastructure financing. I would mention that the last time I appeared before you in October 1993 the Phillies were headed for the world series.

I was delighted to note that Jim Fregosi had such good luck last night. One of my lawyers on the staff mentioned that that is what happens when you use all the tools available to you, including a very good pinch hitter.

Mr. Chairman, I would like to submit my written comments for the record and offer a few oral comments and outline what we are doing at FHWA and address the issues raised by the subcommittee in your invitation letter.

As Secretary Stoll testified, Secretary Peña asked us to develop an action plan to improve our program delivery. The number one item in that plan is infrastructure financing. Our first goal was immediate—to get full ISTEA funding in the fiscal year 1995 budget for the core highway and transit capital programs.

We were pleased that the President's budget contained full funding and we are very hopeful that Members can be supportive as the budget works its way through Congress. The second part of our plan is the innovative financing initiative. The goal is very straightforward. It is to increase capital investment in transportation infrastructure, to attract additional public and private dollars to transportation investment.

We began our work in innovative financing by looking at the world around us and how if currently works. We looked at some of the important financial innovations that State and local governments are making in modernizing their own investment programs and practices. We looked at other Federal legislation, pending bills, Blue Ribbon Panel assessments and other concepts and practices which may help finance infrastructure.

We also looked to the private sector, to the underwriters, to rating agencies, to bond insurers to learn what we could from them. Further and perhaps most importantly, we listened to what the public was saying about ISTEA, about transportation in general. Secretary Stoll mentioned the outreach sessions held last autumn. At virtually every session, we heard that funding for transportation simply had to increase, that needs in each region were far outstripping available funds, that our economy and quality of life were beginning to be affected, and that flexibility envisioned by Congress in developing ISTEA was being undermined by a lack of funds.

But we also heard an increasing willingness on the part of elected officials, transportation leaders and others to think in non-traditional ways about highway financing. Just a few years ago virtually everyone believed that transportation could be provided only by the public sector and financed almost exclusively on a grant reimbursement basis. That single strategy has not allowed us to keep pace with our needs and there is a growing recognition that we need to move from a single strategy of grant reimbursement to employ multiple strategies in much the same way that the commercial market does.

In all of our discussions, we returned again and again to our landmark legislation, ISTEA. And we believe that ISTEA gives both FHWA and the States greater flexibility, greater financial flexibility in particular. In many ways, then, ISTEA has served as the basis for this initiative. The goals for our task force were to demystify ISTEA's financial provisions and to jump start some projects.

We also wanted to make it easier to the States to take advantage of the flexibility provided in ISTEA and we also wanted very much to understand what works best for States and what additional authority and what additional tools we may need.

Our commitment to this initiative is strong and I think best illustrated by the aggressive timetable that Secretary Stoll outlined for you. In March, using section 307 of Title 23, we established the FHWA innovative financing initiative. In a March 14 memorandum

from Administrator Slater, we asked the States to identify specific projects to develop a plan of finance for each and to offer those projects as examples of creative financing solutions, how can we do a deal.

We believe that by developing real examples, by creating a record of achievement, if you will, that we can provide models for others to use. The States said that they were very eager to move beyond discussions and to find real specific success stories that may be employed in the future. The States' response exceeded even our most optimistic expectations.

By early last month, just six weeks after the memorandum came out, 26 States had submitted a total of 60 innovative financing proposals ranging from projects that cost a few hundred thousand dollars up to a billion dollars. Those proposals are still coming in. We are still hearing from States with additional ideas. The projects are diverse and they are financially creative. Some are intermodal facilities. Most proposals recognize the importance of the connection between transportation modes. We have highways that connect to seaports, to transit authorities and I think they reflect quite clearly the type of balanced transportation systems that ISTEA envisioned.

The proposals include transportation enhancement projects and high technology projects. They are spread throughout the Nation and they include projects in rural, suburban and urban areas which may have been delayed for years, were it not for this initiative. We expect to be able to develop a substantial knowledge base from these projects, which we believe will be used to create flexible investment strategies and ultimately will contribute to future transportation legislation.

I would like to highlight briefly some of the characteristics of the proposals and some of the provisions that States have asked us to look at. We received proposals for Section 1012 loans. Those proposals include loans to revenue-generating projects, but they are asking us for more flexibility on repayment methods.

For example, States are asking us to employ a variety of dedicated revenues for repayment, including dedicated revenues beyond tolls. Several States asked to use Section 1044 investment credit provisions, but if they were to use existing FHWA guidance, they would not be able to pass the current maintenance of effort test, so we are stepping back from that guidance for a period of time and looking at ways to construct a prospective maintenance of effort test giving States credit for future incremental investment. The plus from our perspective is that that is going to bring more local and State dollars to the table.

Matching funds. A number of States have indicated that local governments, county governments, that transportation improvement districts and that private parties are willing to provide their own funds to match State dollars, again allowing those State dollars to be spent for other transportation projects. We think that is worth doing.

Bond projects. Most States do not use the Federal bond provisions provided in Section 122. Those provisions allow Federal aid to be used to pay off bond principal and certain interest costs. We are currently reviewing the Section 122 proposals we have re-

ceived. States have also said that they may be able to get better bond ratings if they can show a Federal income stream beyond the authorization period. We know there are complications with this issue, but we are evaluating ways to responsibly address the market concern about those uncertainties.

Unobligated balances as credit enhancements. Some States have proposed using their unobligated balances to serve as a credit enhancement for a debt issuance. They have suggested they would like to be able to tell their bond underwriters that if a bonded project fails to make a payment, State unobligated funds could be used as reserve.

State revolving funds for project loans. While Section 1012 permits a State revolving fund financed through repaid toll loans and there is pending legislation recently introduced by Senator Baucus, which is entitled, the State Transportation Financing Improvement Act. Those provisions would permit the States to set up State revolving loans. However, our knowledge and our experience with these funds is very limited. We would like to see some States establish revolving funds using Federal aid. Again, the results could provide a base of knowledge for future legislation.

There are two other provisions or two other concepts that I would like to mention. One is tapering Federal participation. Some States have asked us to play a larger role in the high-risk period of environmental and preliminary design and they have requested a variable participation ratio which would be tapered as the project progresses towards completion. They have said to us we need you, Federal Government, very heavily involved in the beginning.

At the end of the day, the Federal participation would remain the same, 80–20, for example, but we would rather have heavier participation up front. Some other States have requested that we extend phase funding as it is done on the interstate system to all eligible Federal aid projects. That is particularly important for small States where a single project may tie up a States' Federal aid apportionment for years if phased funding is not otherwise employed. We are looking at that under this initiative project.

Our current status right now, as Secretary Stoll mentioned, we are in the process of developing and refining the financial plan submitted by the State. This is really an iterative process with a great deal of discussion between our division offices and the States.

I would also like to address what we have learned and the future development of innovative financing within FHWA. First and foremost, we know that the long-term revitalization of our Nation's infrastructure will require a partnering effort at all levels of Government and with the private sector. Second, we know, as you suggested, Mr. Chairman, that using only one single strategy to finance infrastructure will not do the job.

We need to use multiple strategies to leverage Federal dollars to attract private dollars and to maximize public-private investment in transportation. While we are learning through this process we hope that States and local governments and Congress will gain additional knowledge as well. One immediate short-term benefit, though, is that we are going to see some projects move ahead that may have been delayed for years and we are going to continually evaluate and reevaluate the factors and financing considerations

that serve to increase transportation infrastructure investment as we approach ISTEA maturity and as we look towards reauthorization.

As we explore some of these concepts, the importance of the role of the Federal Government and the Department of Transportation and FHWA as facilitators has become even more apparent. Since our resources are limited, we must find a way to make the most of what we have. Applying tested, innovative financing techniques to infrastructure development, providing clear guidance and technical assistance to our partners at the State and local level, making Federal guidance and red tape less onerous and burdensome, are the keys to getting the most out of cur infrastructure dollars.

In closing, we believe that the innovative financing effort has enormous potential for our Nation's transportation infrastructure. FHWA is enthusiastic about being the pilot agency for the Secretary's innovative financing effort and we are pleased that the committee has asked us to share our progress today. We look forward to bringing to you in the future a report of our success and we look forward to continuing the discussions in this area. Thank you.

Mr. BORSKI. Thank you.

Mr. Cook.

Mr. COOK. Mr. Chairman, I am delighted to be here to testify before this committee on this very important subject of infrastructure financing. I will talk specifically about water and wastewater financing. My boss testified recently before you about the level of funding in the program and the sources of funding and pointed out that there was a gap between the current annual funding that is going on and the level of needs in the program. And so what I wanted to talk about primarily was how to help move toward closing that gap.

Currently, funding in the program comes from Federal and State grants. In the Federal Government, we have our State revolving funds, which are set up with grant monies from the Federal Government. There are also other Federal sources of grant monies such as the rural development administration. States have their own grant and loan programs as well, a significant source of funding for water and wastewater.

There also are now local dollars going into the program. The most popular and widely used method for financing is municipal bond issues which are tax free.

This Administration has pending proposals before Congress in reauthorization of the Clean Water Act and the Safe Drinking Water Act for State revolving funds. These proposals would extend the wastewater State revolving funds through 2004 and would set up a brand-new revolving fund for drinking water with a recommendation for authorization through 1998. We strongly support continuation of this kind of Federal funding.

Turning to alternative funding approaches, first I think there is an overall approach that is not so much to change the current legal structure or provide more money, but to allow communities, particularly small communities to have access to the existing municipal tax-free bond market. We know that small communities have often a difficult time getting into that market. They don't have the

expertise; they may not have the bond rating. Even if they could break into it, they may have to pay a very high interest rate. So we are looking at ways of helping them to do that through innovative approaches. For example, we have helped in the State of Maine to set up special bond pool program where small drinking water facilities can get access to the bond market.

We also have a very aggressive approach to try to get more information and education out on financing techniques. We have an environmental financing information network, now widely used.

We have set up four environmental finance centers across the country and are currently in the process of setting up a fifth. These centers are providing basic education to people in public finance, as well as a great deal of technical assistance and information to municipalities on financing. We also are advised by the Environmental Finance Advisory Board, which has prepared a number of reports; I believe your committee staff has copies of those reports.

We see some potential, significant potential to increase financing for water and wastewater through additional access to the private sector. Many drinking water facilities are privately financed, but very, very few wastewater facilities are privately financed. I think the roots of that difference are really historical more than anything else. We feel that private capital is underutilized, particularly in wastewater. We feel that there are ways of increasing private financing by removing various barriers and, in fact, the President, in recent Executive Order 12893, directed that agencies seek greater private sector participation by removing barriers and encouraging this kind of thing.

We actually have three pilot projects underway across the country right now to try to work with municipalities to look at increasing private investment. One of these, Indianapolis, decided not at this time to look for additional private capital investment, but they have contracted out operation and maintenance of the facility.

The other two case studies are Miami Conservancy, which is in Ohio and Silverton, Oregon. We think the Miami Conservancy may be close to privatizing their facility. They have had to work past some tax issues and apparently are quite close to doing that.

That leads me into talking about some of the barriers to increased private investment. There was a change in the tax law in 1986, which resulted in less favorable treatment for private involvement. There were, for example, changes to key provisions on investment tax credits, accelerated depreciation and the treatment of other elements of private investment.

We have within our program in wastewater a particular problem with the term, "publicly owned treatment works". The team applies to municipal systems handling sewage from inhabitants within communities. Heretofore we have defined publicly owned treatment works to include only publicly financed facilities and we have structured our regulations around that definition. It has considerable regulatory impact because facilities defined as publicly owned treatment works actually get a better deal under our regulations than those that are not publicly owned treatment works.

We have recommended in the President's clean water initiative that there be a statutory modification of the definition of publicly owned treatment works so that it would not be restricted to those

that were publicly financed. That is, of course, something else that is needed related to Clean Water Act reauthorization.

As I mentioned, there are also provisions in our regulations which tend to discourage private finance and we are in the process of revisiting those provisions. Finally, there are some institutional issues that will have to be dealt with. One is assuring that the rates that are set for water and wastewater are not exorbitant. Historically, since almost all the wastewater has been provided by public entities, they have not had to worry about things like excess rates of returns. The issue of controlling rates will have to be dealt with as part of privatization.

There also is the issue in a privatized wastewater facility of what to do about industrial users of the sewer systems, those industries that actually discharge their waste into the sewers. Right now, they are regulated by publicly owned treatment works. There is a whole regulatory structure that deals with them and we would have to ensure, even though the sewers and treatment plants may be privately owned, that a regulatory structure continues to be in place to control what is put in the sewers.

These kinds of impediments, the definitions, regulations, and the institutional problems, we can deal with. The principle issue is ensuring an adequate rate of return for private investors in these kinds of investments which typically have returns over the very long term.

Let me just conclude by saying that the most important and immediate issue before us we feel now is to extend the wastewater State revolving funds and to set up the new drinking water State revolving funds in order to get new finances into the water and wastewater infrastructure.

Mr. BORSKI. Thank you very much, Mr. Cook.

I would now like to recognize the distinguished gentleman from California, the Chair of the Public Works and Transportation Committee.

The CHAIR. Thank you very much, Mr. Chairman. Let me, first of all, thank you for your leadership in calling for these continued hearings.

As everyone knows, this is the fifth hearing in this series by the subcommittee on infrastructure needs, and if there is one thing that has become apparent in the course of these hearings it is that our infrastructure needs are not being met and that it is unlikely that the current budgetary situation will free up enough money to meet the needs.

Under these circumstances, it is necessary to take a look at ways of financing our infrastructure needs other than through direct government grants, and that is the subject of today's hearings. We are not expecting to find any panacea through testimony that we will receive today, but perhaps we can come up with a package of financing techniques that, along with the grant programs and revolving loan programs we have now, can meet our needs more fully than our current methods alone.

User fees and dedicated trust funds have been our primary financing mechanisms in transportation infrastructure. One suggestion we will hear will be to extend this concept to finance wastewater treatment plants. Toll financing is becoming more pop-

ular and the ISTEA legislation in 1991 made it easier for States to use this approach.

Pension plans have been touted as a major potential source of infrastructure finance. But since pension plans seek out the highest interest rates offered by taxable entities, it is not clear whether the use of pension plans can be structured in such a way as to be attractive to both the pension plan and the tax-exempt infrastructure sponsor. So I am looking forward to hearing whether this problem can be overcome. State revolving funds have worked successfully in financing wastewater treatment plants and the concept might be extended to other types of infrastructure.

Public-private partnerships have been talked about and we look forward to hearing from those who have used this approach. While developing innovative financing mechanisms is important, we also need to keep in mind what public works are all about. They are to provide essential infrastructure for all the people to use and we need to make sure that whatever financing mechanism we use does not exclude part of our citizens in order to make infrastructure available for others.

So, again, I want to thank all of the witnesses for the time that they are taking from their own busy schedules in order to help us in terms of determining public policy in this area, and I do appreciate your willingness to come here and give us your ideas so that we can deal with these infrastructure needs.

There was a statement in Ms. Stoll's statement that really struck me. A 1 percent improvement in overall efficiency of our transportation system translates into $100 billion in savings across the economy within a decade, with improved safety and quality of life for all Americans. It seems to me it is that kind of leveraging of public dollars in the private sector, as well as all of our combined efforts that can make us—whether it is local, State or Federal levels of government—be able to meet those needs that we know exist across the country. So, again, I just want to thank all the witnesses for their putting on their best bright caps to be able to help us plow through this in order to make decisions for the future. Thank you very much.

Mr. BORSKI. I thank the distinguished Chair. What restrictions are there on loan provisions in Section 1012 of ISTEA that limit its usefulness in opening up innovative financing alternatives?

Ms. STOLL. I think I am going to defer to Ms. Garvey on this question.

Ms. GARVEY. Mr. Chairman, we are not sure that there are really any restrictions. We think that in some ways some of the guidance and some of the directions that we may have taken earlier may have been somewhat restrictive. I think that is one of the reasons we are saying let's step back from that for a bit and let's look at some proposals and some projects that States might suggest and we will take another look at it. So we are not concerned with the legislative or congressional restrictions per se. We are saying let's try to establish what really works and move forward.

Mr. BORSKI. Let me ask about the ideas that have come forward that perhaps might be the most useful. Is there a mechanism set up to distribute those ideas to other States so that they can be aware of them?

Ms. STOLL. There is both an informal and formal mechanism. The technical provisions of ISTEA permitted experimentation in this respect and that is the basis of over 60 projects that have been submitted to us. So we have been encouraging people formally to submit projects that look like they could be available for that, but we are also engaged in an informal outreach to people who have more experience and facility with handling financial complexities.

We are dealing with State treasurers, with the Governors' offices and financial people who are in them trying to get those people to sit down together.

Ms. GARVEY. When our projects are ready, what we would like to do is, again, working with Members of Congress, members of this committee, and obviously the Governors' offices as well, unveil and offer those projects as case studies to States as examples that they might use.

Mr. BORSKI. The 60 projects you have received so far—are they mostly highway?

Ms. STOLL. There are some traditional highway or bridge projects. But in those cases they often show connections to other modes. We have received requests for intermodal facilities. Transportation enhancement projects, which would be considered perhaps more environmental projects, are also included in the mix. If you were to look at a general description of all of them, I think you would be very impressed with how they do reflect a balanced transportation view and I think the States deserve a great deal of credit for showing that kind of creativity.

I think the States did a good job of forming, in some cases, some very new partnerships. We are seeing States coming in with county governments, with local transportation districts, with toll authorities, I think partnerships that were envisioned in ISTEA and we are seeing that in some of the projects presented.

Mr. BORSKI. Ms. Garvey, some States like Pennsylvania have a constitutional bar on the use of gasoline tax in the State for transit or any uses other than highway. What happens to States with those kinds of prohibitions? Will they be left behind while others will take better advantage of these ideas?

Ms. GARVEY. They shouldn't be. We are looking at ways that we can offer incentives to States; for example, if they were to put some money toward the transit project, as you had suggested in our conversations, that there may be incentives for them. That is part of what we are trying to develop. Are there incentives that we can put in place that will encourage States to do more for transportation, bring more State dollars to the table.

Mr. BORSKI. One critical need for our infrastructure is better maintenance of our existing infrastructure. How can innovative financing techniques help out with that kind of problem?

Ms. STOLL. In the same way. The biggest bang for your buck for any marginal dollar in transportation investment is to repair an existing facility. It is also the kind of facility that will be likely to attract the most attention from private investors because it is a known commodity.

If it is a facility that has been working and it is not working as well, one has a good grip on what its capacity and potential are and the return on the investment is probably clearer than would

be the case with a brand new untried facility, untried in an area that no one knows what might really happen. So we see this as definitely carrying forward certainly the rehabilitation of transportation facilities.

Mr. BORSKI. How can we make sure that new finance induced by these techniques adds to rather than substitutes for existing financing sources?

Ms. GARVEY. I think, again, the incentives is very important. When we are talking about looking at the level of maintenance, for example, we are giving States credit if they bring additional State dollars to the table for transportation, and I think that is an important concept; so that when we think about what kind of credit will we give to the States, the credit will occur if there are additional State dollars or local dollars that are brought to the table for transportation investment.

Ms. STOLL. In addition, in ISTEA there is a requirement, Section 1044, which does require a maintenance of level of effort to be maintained. We have been talking about possibly asking for a kind of a certification from the Governors of States that maintenance of effort is stable before we move in with an innovative financing idea or mechanism for their projects just to ensure that what you have described doesn't happen and we aren't taking that money away.

Mr. BORSKI. What role is the Federal Transit Administration playing in the Department's innovative financing efforts?

Ms. STOLL. The Federal Transit Administration has joined the overall Innovative Financing Task Force that Jane Garvey and I chair. In addition, they have set up within their own mode a subcommittee of our committee and they, too, are actively pursuing the possibility of using innovative means to finance their projects. Some of the intermodal projects that have come in as part of the overall solicitation include transit components, but transit is coming up with its own projects as well as is working energetically with us on this.

Mr. BORSKI. The gentleman from Tennessee, Mr. Duncan.

Mr. DUNCAN. Thank you, Mr. Chairman. I would like to just ask the panel a few questions.

First of all, unfunded Federal mandates have become one of the biggest issues in the country for both Democratic and Republican officials across the Nation at State and local levels. Is the Administration—these certainly have an impact on infrastructure needs and requirements.

Is the Administration doing anything to relieve the burden of these or ease the burdens of these unfunded mandates in any of the work that you are doing?

Mr. COOK. Let me comment on that. We certainly are, in the process of reauthorization of the Safe Drinking Water Act, looking at new approaches that might give communities some relief from certain requirements that currently are mandated.

In the Clean Water Act, there are a couple of provisions that would have very marked effect on mandates on communities in both the stormwater area and combined sewer area. If the provisions we have recommended are enacted, there would be savings of many billions of dollars. Those are the most dramatic changes that we are looking at. We also have a major effort underway with

industry and municipalities to revisit the most significant of our regulations in selected areas to see if there aren't ways that we can do business better and smarter.

Ms. STOLL. I think that in the world of transportation we understand what we are doing as an investment with an economic return and we measure this in part by being able to attract additional capital to what we are doing. We enhance the capital investment in infrastructure, a way to assist in dealing with the mandates that have been put on transportation such as Americans With Disabilities Act and others, which are critical to ensuring that transportation is fairly distributed and available to everybody. We are looking basically to enlarge the pot of funds available to deal with those through the innovative financing means.

Mr. DUNCAN. All right. I notice that—of course, the hearing is about innovative ways of financing and all of the discussion has been about ways to raise additional money, the increased use of tolls and other things. Are you also—are your efforts also directed at finding innovative ways to hold down costs in conjunction with that?

Ms. STOLL. Yes. The Executive Order issued by the President in January on infrastructure involved several components. One of them was seeking a cost-benefit analysis, requiring a more rigorous cost-benefit analysis before there was investment in infrastructure projects with the Federal dollar. A second was requiring a more rigorous approach to managing the infrastructure that we are developing and maintaining.

It is through these means that we are looking for efficiencies in managing our infrastructure, and for strategic investment and efficiencies in the management and operation of the infrastructure.

Ms. GARVEY. I would also add that beyond this effort there are a number of other efforts within FHWA, including the quality initiative, again working very closely with States about ways that we can deal with quality issues in construction and management, looking at some design build concepts that may keep costs down, looking at some of the contracting we are doing in cooperation with the States. States essentially do the contracting, but are there things we can do in helping to keep costs down? That is an issue we take seriously.

Mr. COOK. If I could add an EPA word on this, there are a number of initiatives that we have. Pollution prevention is one of the most important. We feel if you can keep pollution out of the wastewater stream or out of the drinking water supply to begin with, there will be substantial savings. Our sense is that, if people have to pay the full cost of treatment, they will be more careful in use of those dollars. We are looking at institutional changes that we think bring about savings through economies of scale such as bringing very small water and wastewater utilities together at least institutionally so they can hire one well-qualified operator or two well-qualified operators rather than, separately, several not so well-qualified operators.

Mr. DUNCAN. Well, Mr. Cook, I am sure you are familiar that just a few weeks ago ABC, the National News of ABC had a special called, "Are We Scaring Ourselves To Death," in which the EPA received a great deal of criticism for not looking at the cost-benefit

analysis aspects of various projects and that in the process we destroy jobs and create poverty that decreases peoples lives by they said an average of 7½ to 10 years, that that is the biggest threat, and that sometimes trying to get at some minute threat that is maybe no real danger to people at all that we are not seeing the forest for the trees, so to speak. So it is good to hear that EPA is looking hopefully or will look at the cost benefits of some of these things in the future. That certainly needs to be done by your agency more so than probably any other in the Federal Government.

Let me ask you this, Miss Stoll. President Clinton was quoted recently as saying he was ready to submit to Congress in early 1995 an infrastructure financing bill. Are you familiar with that or what is going to be in that? Do you know about that?

Ms. STOLL. At this time the Administration has a large working committee that cuts across a number of agencies in the government that have infrastructure investment. We are a participant in that and the particular individual who is representing us on that committee is here, and the work has been proceeding. They are looking at a number of possibilities, including some version of an infrastructure bank, but the ideas are very much in the formative stages right now and I am sure we will be having drafts back very shortly to start to critique and develop into something. That is what this is about.

Mr. DUNCAN. Thank you very much.

Mr. BORSKI. The gentleman from Maryland, Mr. Gilchrest.

Mr. GILCHREST. Thank you, Mr. Chairman. The first question would go to Mrs. Stoll and Miss Garvey and it is not about financing or things like that, although that is the major portion of the problem, I guess. I was wondering as far as roads are concerned, we are dealing with interstate highways, I guess, and a number of infrastructure problems with roads—does the Department of Transportation work with private industry in finding ways to make the roads last longer? Could you give me an idea of how long, let's say, a stretch of 95 from Washington to Richmond, how long would that go before it would have to be repaired or filled in with pot holes? Is there a certain standard mix of asphalt that the contractor has to go by, and people always use Germany and Japan as examples and I am just using them as an example. I don't know anything about their roads, but they always seem to be a little ahead sometimes of everybody else in innovation.

Do we know how long our roads last compared to the length of time roads last in Germany and Japan and in those countries does the central government put a requirement on how long the road will last like a warranty, the contractor has to come back and at his own expense to repair the road? So how long do roads last? Are there better application tours of asphalt and is there research being done on that?

Ms. GARVEY. Let me make several general comments and then also ask one of the engineers who accompanied me today to join in.

First of all, I think I mentioned briefly——

Mr. GILCHREST. One more thing. I just thought of this. Let's say some day we don't use so much oil. I guess if we didn't, we wouldn't need the roads. If we didn't use a lot of oil, where would we get the stuff to fix the roads?

Ms. GARVEY. I mentioned very briefly the quality initiative that we have undertaken at FHWA. This is a very strong partnership between, us the States, and the contractors and all the issues that you have addressed are issues that we are looking at, how can we build roads better in this country? What is the quality we want to establish for ourselves?

If you look at some of the standards in Europe and you look at some of the roads, you will see that they have a much smaller network to deal with. We made a very conscious decision several decades ago that our goal was to put in place a network of roads that was going to stretch from one end of this country to another. That was a very sizable commitment.

In some of the European countries where the boundaries, obviously, are much smaller, the network of roads is much smaller and can devote resources to that smaller network. Our U.S. commitment is to a larger network of roads. This difference set in place some standards that may be very different from those in Europe. Would you say that is essentially correct?

Mr. POSTON. That is correct.

Mr. GILCHREST. Interstate highway systems are designed not to last as long.

Ms. GARVEY. To last 20 years. Very often it is tied to the maintenance effort that a State undertakes.

Mr. GILCHREST. I drive from the Eastern Shore to D.C. almost every day and have been on that road a lot in the last 30 years and that road does not last 20 years. Is that the amount of traffic—seems like the road is in constant repair. Would that be—is that a fair assessment that that road doesn't last 20 years or from D.C. to Richmond?

Ms. GARVEY. That stretch of road is not something I am familiar with on an intimate basis. I would say it would have a great deal to do with the level of maintenance that is happening on a daily basis or on a yearly basis, rather. Your point is that they are maintaining it all the time, it seems to always be in need of repair; is that——

Mr. GILCHREST. It is always having repairs. I don't want to get too far off—you made a comment about we made a conscious effort to build interstate highway systems, which is a lot bigger than what they might have in Europe. Does that mean that because European roads are smaller, they have less to work on, their roads are built to a tougher standard than our roads because they don't have as many miles and therefore they last longer.

Mr. POSTON. My name is Jerry Poston. I am with the Federal Highway Administration. The initial concept—let me make a statement about the initial concept of the interstate system before we talk about Europe. The initial attempt at interstate highway system was to get that system in place for $30 billion. That was the initial goal. To do that, a 20-year design life was set for the highway. It was a conscious decision to design that facility to last 20 years without major reconstruction and it was designed that way based on the traffic that was projected to occur.

Mr. GILCHREST. Has that worked?

Mr. POSTON. The problem that occurred is the traffic grew faster than it was predicted and many of those pavements picked up what

was thought to be 20 years worth of traffic, the pavement was subjected to that in less than 20 years, possibly in 15 years, probably in 12 years—anyway, a lesser number.

The CHAIR. Would the gentleman yield? Part of that problem is you talk about projection, but as I recall, the anti-growth advocates said by the time that highway opened they didn't want this to be inducing more development. I came from local government and we tried to build in some extra capacity so that if there were more traffic, we could expand lanes; but we couldn't buy any more right-of-way than this because the anti-growth advocates didn't want us to do anything that might induce growth. Usually, those highways were built so when they opened on 10 September of 1972 they were already too small. And so we never really built to growth.

Plus, when we started after President Eisenhower signed the Interstate Highway Defense Act, I would imagine truck weights were probably at 45,000 pounds. We are now at 80,000. Maybe our spread on a per-axle basis is a little better, but our gasoline tax is 14 cents. The European fuel tax is $5.00 or whatever. That is why in ISTEA we did build in two things as a requirement, a Bridge Maintenance Program and a Pavement Management Program, because of the very issue that you are bringing out, that somehow even though it is designed for a 20-year life, why is it falling apart in 9 or 11 years?

I said okay, fine; let's put in a Pavement Management Program requirement. Let's put in a Bridge Maintenance Program. In the new bill on NHS we have gone further. This time we are saying to the contractors we want a guarantee from you. We had to be very careful about how we did that, but, again, we are trying, I think, to deal with it. But the problems grow at this level to and our answers are at this level, and there is always that spread between the problems and our solutions. So part of it, I think, is what we are talking about here, and that is trying to come up with some adequate financing mechanism to be able to deal with the concerns that you are rightly bringing up.

Although having gone out to the Eastern Shore two weekends ago, we now have a divided four-lane highway, a total of eight lanes being built for you out there.

Mr. GILCHREST. That is true. Thank you, Mr. Chairman. If I was in your district 30 years ago I probably would have been one of those anti-growth advocates. We are thinking about cutting down the Bay Bridge to the Eastern Shore. Everyone is still welcome to visit for the tourist trade.

Mr. BORSKI. Which end would you be on?

Mr. GILCHREST. I will be on the other side and use my fax machine as soon as I get one. Just a quick comment. I know there is a lot of traffic that goes back and forth to D.C. and it certainly is an apparent blessing for the expanded lanes on Route 50 from the Eastern Shore to Washington, D.C. And I say apparent blessing because it has been my limited experience that as soon as you build a highway, that highway, for one reason or another gets pretty well filled up and over capacity, almost as soon as it is built. In the 1950s this country decided with a great deal of vision to create an Interstate Highway System, and we are just about—we have just about completed that. So my question, I guess, is: have we reached

the time that we should now recognize that maybe some other major project for transporting people in the United States might be undertaken?

We used to have mass transit with trains, buses, trolleys. My mother was born in Washington, D.C. and she said she got around easier when they were trolleys here. Can we envision alternative modes of transportation as opposed to another highway, another expansion, another beltway?

Ms. STOLL. Of course, the Clean Air Act has changed the world with respect to continued expansion of highways around the United States, and many people are both nostalgic about what there once was and realistic about how we lost what we once had in terms of urban transportation. There are a number of new light rail transit systems being built all over the United States at this time in virtually every major city. Many of these are on the right-of-ways of the old street car tracks, many times cities have had to repurchase those right-of-ways in order to develop the inter-urban systems that used to function. There is a resurgence of interest in passenger rail and commuter rail and this is, in fact, a complex network for transportation in the United States that is emerging and one that we are capturing as a focal point for our investment purposes, our capital expenditure purposes.

Mr. GILCHREST. Thank you. Could I have just one—I know I am going over. I am glad to hear that. I almost think that the idea for—the apparent large effort to develop the thinking that went into an interstate highway vision, I would think that we need the same effort to go into an alternative mass transit system, which is much more complicated than the interstate highway system, but I think we need that same kind of vision.

Mr. Cook, you made a comment earlier that, in response to Federal mandates for safe drinking water, wastewater and things of that nature, and you said that there is some relief in the Safe Drinking Water Act for local communities. I am going to ask you what you mean by that especially as far as water quality is concerned, drinking water quality is concerned.

In your opinion is there good science now that evaluates realistically, and that is a relative term, I guess, what the risks are as far as people having safe drinking water? Can you give—I guess I should have written these down and handed them to you—can you give me some examples of what causes water to be unsafe to drink?

Mr. COOK. Okay. What we are seeking in reauthorization of the Safe Drinking Water Act are changes that would get out from under the current requirement to add 25 additional contaminants to the regulatory structure every three years. We would much rather be given the discretion to decide what to regulate and when, given certain reasonable criteria, rather than have an automatic mandate as under current law.

Mr. GILCHREST. You are saying you would like to have the discretion to determine what you believe—you said 25 contaminants. So you want the discretion not to include those 25 contaminants——

Mr. COOK. We would like the discretion to decide when and what contaminants we will regulate rather than having to regulate 25 more every three years.

Mr. GILCHREST. Who would give that discretion; us?

Mr. COOK. Yes. Under current law, we do not have any discretion on this point and we are litigated every time we miss a deadline on this.

Your other question had to do with contaminants in wastewater and what their sources are?

Mr. GILCHREST. Yes. If you can give me an example of what are the major sources of contaminants in urban drinking water, in suburban drinking water and rural drinking water.

Mr. COOK. The sources actually vary from area to area and the type of community may not be the best way of breaking it up. The sources of contaminants are twofold—naturally occurring and man-made. Naturally occurring contaminants include things like toxic metals, which come out of the ground and leach into the water supply. They include Radon, which is underground. It is a gas, which contaminates underground sources of drinking water.

It includes, for surface water, certain naturally occurring microbiological contaminants that can make you sick. Here I am talking about animal feces and things of that kind. It includes certain organic contaminants which when mixed with chlorine or other kinds of disinfectant also can create a contaminant of concern. So those are some of the major naturally occurring contaminants.

Man-made contaminants can come from many different sources. Obviously sewage, which makes its way into the drinking water supply, is still a concern in many parts of the country, especially where we have septic tank systems or combined sewer overflows. Beyond that, there are all kinds of industrial and commercial chemicals of one kind or another that are of concern and now agricultural chemicals are also of concern.

Mr. GILCHREST. Thank you. Thank you, Mr. Chairman.

Mr. BORSKI. Chair Mineta.

The CHAIR. Let me ask, Ms. Stoll, in your testimony on page 6 you talk about the $1 billion that has been flexed from highway to transit. In my reading or from previous testimony, as I recall, if it is a billion dollars, it seems to me, as I recall, the figure was about 7 percent of the flexible funds have been flexed. I don't know if that is correct, but, as I recall, that was earlier testimony that we had received. Having authored ISTEA, it bothers me that only seven percent has been flexed. Are we doing something and working with the States?

I recognize we have State departments of transportation, but in effect they are still State departments of highways. Some of the discussion I have had on this area is more with Mr. Francois and the AASHTO people about why they aren't using the flexible provisions that we built into ISTEA as much as they have. But is there some kind of an organized program that either DOT or FHWA are doing in order to try to get the States to be "more flexible?"

Ms. STOLL. The effort to develop an intermodal mentality in a large institution like ours just takes time. We now have an Office of Intermodalism and that is a key step. It functions directly under the deputy of the department and, in fact, a gentleman from San Francisco heads it up. The Federal Transit Administration——

The CHAIR. On that, what power really does Mr. Huerta have?

Ms. STOLL. He has the powers of persuasion.

The CHAIR. Does he have money? Money is a very persuasive object.

Ms. STOLL. It is the most persuasive object, no question. The way the Department is currently structured the Office of Intermodalism is not a granting agency and, as a consequence, his persuasion is directed at dealing with the sponsors of projects that could be funded under the current ISTEA provisions, which may not be highway projects.

The FTA is very active. It is also the case that within the Federal Highway Administration there is a change that we are all observing in terms of their internalizing the sense that we have got to deal with the congestion and we cannot deal with it by simply increasing the lanes of highway that we are going to be having and that a larger percentage of the funds can be flexed. It is not an easy task, but it is very much on our minds that we have the capability to do this and we see progress in this direction.

Ms. GARVEY. Mr. Chairman, there are three points that I would mention. One is the good news that while it may not be a high enough percentage, it is increasing every year so every year we are seeing more States, for example, more money. I think that is good news. I think that gets to the point that Assistant Secretary Stoll mentioned. It is still a new bill and in the beginning we had trouble getting people to understand what it was all about, but every year we are seeing improvement in that area.

Two other points—one, our procedures. FHWA procedures and FTA procedures are different and that has created some confusion for transit authorities and for States who want to flex funds. We have worked together in the last six months to a year to standardize our procedures so it is easier for States and MPOs who want to flex funds. That is going into effect now and I think will be a tremendous improvement.

The third issue is our work that we are doing with our MPOs. Grace Crunican and I spent a great deal of time on the road talking to MPOs and State DOTs doing flex funding, about intermodal connections between highways and transits. We are doing a lot of work with MPOs directly and with the State DOTs.

Some States have already organized themselves into Departments of Transportation rather than single modes. We know there is still more work to do, but I would say that we are encouraged with the efforts that have been made in the last six months to a year.

The CHAIR. When Governor Clinton was running for office he talked about infrastructure. In fact, he gave a speech in Portland, Oregon, about a $20 billion dollar infrastructure program. Yet, when the economic stimulus program was being put together in January 1993, infrastructure all of a sudden became women's, children's, infants' programs, infrastructure became education, and the transportation part of it, I think, was of that $16.3 billion economic stimulus, I think we ended up with 5 or 6, somewhere around in there.

I hope that we redefine infrastructure back to what I thought it was, especially when Governor Clinton was running for office, because I think we are falling behind and you folks know that. And

we really have to have a reemphasis on the whole issue of investment in things that really make our economy go and grow.

One of the things that we did on this committee as part of H.R. 3400, I think it was, which was the Reinventing Government legislation, we reported out two things. One was scorekeeping and the second item was the capital budget. Now, it seems to me that we ought to be able to treat the capital budget separately from an operating budget; and frankly, we did this because it was part of Vice President Gore's Reinventing Government approach.

I was really surprised when, on that Saturday when we were going to be going to the Rules Committee on H.R. 3400, that on Thursday we get a letter. Mr. Moakley, the Chair of the Rules Committee, gets a letter from Mr. Panetta saying he was in opposition to the two items being reported out by public works relative to scorekeeping and on capital budget. We had been working with OMB six months before this happened and were caught completely blindsided.

Is there conversation going on in your shop to the Secretary about further conversations about a capital budget?

Ms. STOLL. The answer is, yes, there is an ongoing conversation——

The CHAIR. Have we brought anything to closure? Conversations go on and on.

Ms. STOLL. No. This conversation goes on and on and you have captured the essence of the conversation. There are people on all sides of this issue. There are strong pockets of resistance within the Administration to capital budgeting and there are strong proponents of it.

The CHAIR. What is the resistance?

Ms. STOLL. I think it is grounded primarily in believing that it will not enable us to budget any better than we do now, that we have the tools and mechanisms at our disposal which enable us to budget effectively. There are others who take a different view and there is no resolution of this yet, sir.

The CHAIR. When you want to talk about life-cycle costing in terms of flexing funds, about whether or not we are getting our money's worth for the buck we are spending, it seems to me you can do that much more clearly with life-cycle costing, with a capital budget——

Ms. STOLL. Even the very simple concept of depreciation of an asset works better if you think of it within a capital budgeting framework and we don't do that, that is true.

The CHAIR. That is why we put in the element of requiring a maintenance program for bridges and pavement management, because in a governmental agency we don't have a depreciation allowance to be able to account for it in that sense. It seems to me literally bean counters are just bean counters, and it seems to me that we have to somehow get the attitudes turned around in terms of looking to the future much more than keeping an eye on where we spent the buck yesterday.

We ought to really be talking about, again, getting bang for the buck. That is the future. That is not the past. We will, we will keep working at it and hopefully we will get there some day. Thank you very, very much.

Mr. BORSKI. I thank the Chair. Perhaps one of the ways we can get to it, Mr. Chairman, perhaps we should look at the possibilities of asking for a White House conference on infrastructure and capital budgeting to bring these ideas and thoughts directly to the President of the United States.

The CHAIR. Let me say one more thing. If we keep on talking about gasoline tax and electric vehicles and alternative fuels, our highway trust fund is going like there [down]; yet the need for maintenance or new construction are going like this [up]. And again, it seems to me we ought to find some kind of an energy equivalent tax.

I know when they are talking about alcohol, beer, wines, and hard liquor, they come up with an alcohol equivalency. Maybe we need to get away from the gasoline tax and get to an energy equivalency tax, whether it is an electric vehicle or methane-powered or ethanol-powered or whatever, so that we are still going to be getting some revenues; because otherwise we are just burying ourselves deeper in this hole. Are any studies going on on that, Secretary Stoll?

Ms. STOLL. It is certainly a question we have asked. There is analysis going on. We are concerned about what happens to revenue as energy consumption goes down due to a more efficient automobile—we see this as a problem that we are going to have to deal with. There are studies going on now.

The CHAIR. Do you know when those studies will be coming in?

Ms. STOLL. I don't know, but I will get back to you on that.

Mr. BORSKI. Okay. We have a number of other questions I would like to submit to you in writing for your response. Thank you very much for coming here today and sharing your thoughts and views with us. I congratulate you on the work you are doing in moving forward. It is a long way to go, but we are making those first steps.

On our next panel we have Felix G. Rohatyn, Senior Partner, Lazard Freres & Company; Daniel V. Flanagan, Jr., Chairman, The Commission to Promote Investment in America's Infrastructure, President, The Flanagan Group, Inc., Arlington, Virginia; and Joseph M. Giglio, Jr., Senior Advisor, First Southwest Company, Chairman of the Board, Apogee Research, Inc.

May I ask you to stand and raise your right hands please.

[Witnesses sworn.]

Mr. BORSKI. Thank you very much. Mr. Rohatyn, I understand you need to leave shortly, so let me ask the indulgence of the other panelists, if we could hear from you first.

TESTIMONY OF FELIX G. ROHATYN, SENIOR PARTNER, LAZARD FRERES & CO., CHAIRMAN, MUNICIPAL ASSISTANCE CORP.; DANIEL V. FLANAGAN, JR., CHAIRMAN, INFRASTRUCTURE INVESTMENT COMMISSION; AND JOSEPH M. GIGLIO, CHAIRMAN OF THE BOARD, APOGEE RESEARCH, INC.

Mr. ROHATYN. Mr. Chairman, I appreciate the opportunity to address you on a subject of critical importance to the economic and social life of our country: Its investment in physical facilities.

Every year or two a natural disaster comes along and points up the need for Federal assistance in the area of public investment.

This takes the form of disaster assistance after events such as Hurricane Andrew; the Midwestern flood; the California earthquake.

There is, however, a need for a greater permanent Federal involvement in public investment in this country. State and local governments are, in most cases, at the limits of their financial capabilities while, all over the world, a greater emphasis is placed on public investment. This is driven both by the private sector need for more infrastructure support required by modern technology as well as the need for more real job creating capabilities of the public sector.

For the Federal Government to play a permanent and constructive role in public investment, one basic principle should be adopted. The Federal effort should be separate and distinct from the expense budget. It must also be fiscally responsible.

The fact that investment in a school building or a bridge is now treated as if it were next week's welfare payment is economic nonsense. It also constrains much needed investment due to the existing budgetary caps. These are quite appropriate expenditure limits, but not as limits on genuine investment. No private corporation could function if its investment in plant and equipment could not be financed by borrowing and were treated as a everyday expense.

This objective can be accomplished by the creation of a free-standing, independently financed public corporation to assist State and local governments with their investments.

An aggressive, long-term federally assisted public works construction program is an economic and social necessity. Investing $25 billion to $35 billion a year incrementally could generate from 800,000 to 1 million jobs each year; could be part of a targeted defense conversion plan, and if combined with Civilian Conservation Corps-type training camps, could provide training and employment for inner-city youth.

It would also be psychologically uplifting in a time when fear of new layoffs in the private sector, as well as of cutbacks in State and local governments, is pervasive. In an economy of $5 trillion, this is an extremely modest program, unlikely to have inflationary impact and providing very mild stimulus.

The challenge is to create a structure that could serve as the centerpiece for such a program. New York's Municipal Assistance Corporation, which I chaired for 18 years, could be a useful model.

MAC was created in 1975, by the State of New York, to provide financing for New York City, then in serious financial difficulties. Between 1975 and 1984, it raised nearly $10 billion. Through the sale of MAC bonds, backed by a portion of the city sales tax, New York City was able to significantly increase its investment in physical facilities. This investment provided significant stimulus to the City's economy.

The investment program, financed by MAC, lasted 10 years, from 1975 to 1985. Since 1985, MAC has been paying down its debt and will have retired all of its outstanding bonds by the year, 2008. None of MAC's debt appeared on the city's or the State's budget. To the extent MAC made use of a portion of the city sales tax for debt service, that amount and that amount only, was charged to the city's expense budget.

A similar approach, using a longer time frame, should be adopted at the Federal level. We need not start with the largest possible program. Rather, the initial goal should be limited, though capable of expansion as the program proves itself.

To illustrate, let us consider a $200 billion 10-year effort. The Federal Government could create the Interstate Financing Corporation with about $100 billion of borrowing authority. The IFC would provide incremental financing to State and local governments over a 10-year period on a matching fund basis. About $100 billion or 50 percent would be generated by sales of IFC bonds, guaranteed by the United States Government. About $40 billion or 20 percent, would be provided by participating States on a basis reflecting their distribution share. This could even take the form of the States actually subscribing to the stock of the IFC for their contribution.

The balance would come on a pay-as-you-go basis from proceeds of the revenue stream described below. This would be an extremely conservative financing structure.

Revenues could be generated by raising the Federal gasoline tax by 2 cents a year for five years, an annual increase of about $2 billion annually. The revenue stream which would build to $10 billion a year after five years, together with a State share, would support a 10-year, $200 billion investment program of which $100 billion would consist of borrowings.

It would fully service and retire the outstanding bond after 40 years. The Federal guarantee would only come into play if Congress interrupted the revenue stream. The debt-service coverage should result in an investment-grade rating for the bonds, which would make them eligible for pension funds investment.

To insure fiscal restraint, bond covenants would prohibit the issuance of additional bonds unless additional revenues were dedicated. The schedule attached to this testimony is but one theoretical model of debt-service coverage and cash flow for such a program. It assumes the bonds to be taxable. It assumes an abrupt cutoff after year 10, but as a practical matter, any program would build down more gradually.

There would be ample capital available to purchase these bonds. For example, the total amount of private and public pension funds is presently $3 trillion. This is expected to double over the next 10 years. A $200 billion, 10-year, public investment program, of which about $100 billion would come from borrowing, could be entirely funded by the commitment of less than 5 percent of the increase in pension funds becoming available over the same period. Naturally, the bonds would have to meet the most stringent fiduciary standards. They would also be sold to mutual funds, financial institutions and the general investing public.

The only Federal budgetary budget cost would be the value of the guarantee, no more than 1 percent of principal, or $1 billion over 10 years and the IFC borrowing should be totally off-budget. The cash flow would be revenue neutral. A strong control mechanism such as MAC's board of directors—consisting entirely of independent, private sector directors—would insure that the funds were used prudently.

The board would also have to certify that the investments financed by the IFC would be incremental to the States' and cities' existing programs and not a substitute thereof.

The imposition of additional energy taxes is obviously a political challenge, but an annual increase of 2 cents a gallon for five years, earmarked for new construction and job creation, seems a small price to pay. Oil prices are now near their lowest level, in real terms, for the past 30 years. The benefits of the new investments and the 750,000 to 800,000 jobs created annually would seem to me to far outweigh the added cost of 2 cents per gallon of gas, which translates to about $20 per year for someone driving 20,000 miles.

The requirement of a 20 percent local share may be a problem for some States, but cost sharing is probably a necessity. The subscription, however, would take place over time in proportion to the overall borrowing program. The program should also provide that some investments would generate their own revenues such as toll roads, bridges, et cetera, that could be used for further expansion or alternatively for accelerated debt repayment.

The Nation's economic well-being has historically been dependent on public investment, under both Democratic and Republican Presidents. Franklin Roosevelt helped steer America through the Depression in part through the activities of the Reconstruction Finance Corporation and other significant public investment projects. These dealt with urban and rural problems, with electrification and water, with roads and bridges.

In the 1950s, Dwight D. Eisenhower launched the Interstate Highway Program, which helped sustain an economic boom well into the 1960s.

At a time when we are looking for ways to fight crime, offset job losses in the private sector and improve the quality of urban life, a significant public investment program is long overdue. It should do more than the present focus on building jails. It should appeal to Republicans and Democrats alike. It is consistent with President Clinton's original call for $80 billion in infrastructure over four years, but has the advantage of a longer time frame allowing for better planning and commitments. It would be a fitting part of the President's call for change and for investment in America. Thank you, Mr. Chairman.

Mr. BORSKI. Thank you very much, Mr. Rohatyn. Has an infrastructure bank of the scale you propose been tried in any other countries?

Mr. ROHATYN. Well, I don't know that, Mr. Chairman. In Europe, when John Monet began the creation of what turned out to be the European Community, it really started with the European Coal and Steel Authority, which was a development bank essentially for a particular industry. It then spread to something called the European Development Bank, and certainly the European Community uses regional and unified development banks as a way to finance some of these projects.

Mr. BORSKI. One of the problems we have here is getting the use of the gasoline tax for infrastructure. I am sure you are aware we don't get to spend all the money that is collected in the gasoline tax. With your plan, how would we guarantee and ensure that 2 cents of increased gas tax funds would be used for infrastructure?

Mr. ROHATYN. The money would come into a trust fund essentially and would be essentially pledged to pay off the bond that would be financing the program. The money could never be bled off into other purposes. When we created the Municipal Assistance Corporation in New York, we had a similar problem dealing with a sales tax that we dedicated to MAC. The way we dealt with it was to create MAC as a structure with extremely stringent controls, very strong bond covenants and the fact that we had first call on these revenues and earmarked them for that particular purpose. There was no legal way to get at these revenues by any other State or city entity.

Mr. BORSKI. If the gasoline tax were to be raised 2 cents, as you suggest, in the next five years, do you think there would be a problem raising an additional 2 cents for other needs of government?

Mr. ROHATYN. My own personal view is that this country's energy policies are grotesque when you compare with what is happening in Europe and other parts of the world in terms of taxing uses of gasoline. We are very, very far behind. I could argue that we should raise gasoline taxes much more and use some of them to rebate income taxes to middle income people as one way of changing the tax structure of this country. But I am dealing with one small issue at a time here, so I am dealing with 2 cents at a time. My objectives are much more modest at this point.

Mr. BORSKI. And practical and achievable, we hope. Critics of the creation of a national infrastructure corporation claim that this organization would just add another layer of bureaucracy. What is your response to that?

Mr. ROHATYN. At MAC we ran an agency that borrowed $10 billion over 10 years and is going to pay it all back over the following 15 years, which is probably unique in the history of this country and which also managed to raise another three-and-a-half billion dollars of surplus funds by the way we managed the financing of our structure. We ran that agency with never more than 12 people. We ran that agency with a budget of less than a million dollars a year.

We used consultants, auditors, lawyers, but because we had a private board of directors, which was responsible to the Governor and to the mayor, we operated under the Sunshine Law so that whatever we did was open to scrutiny. We ran that corporation, Mr. Chairman, probably with less money than—I don't know, a public toilet at Shea Stadium. I think that is the only way to do it, frankly.

Mr. BORSKI. You are obviously familiar with the problems major cities have, such as New York. My City of Philadelphia is in a similar situation, financially. Where are cities that are having these difficult financial times going to come up with their matching share?

Mr. ROHATYN. I think, Mr. Chairman, if you have a 20 percent matching share, which, as I said, you can phase in slowly, because these programs will take hold slowly, the cities and States will just have to deal with it. If you look at the needs of the State of New York for schools, school construction say, in the City of New York alone we have a thousand schools. Five-hundred fifty of those buildings are over 50 years old.

We have just cut the capital budget for the schools in half. If the States and the cities had an 80–20, for instance, matching requirement, they would come up with the 20 percent. We could borrow the money. We can raise revenues to deal with it. We can save monies to deal with it. I noticed the question earlier on how you can control costs in some of these things. One of the things we did at MAC was out of our surplus funds we committed half a billion dollars for school construction and we essentially financed the creation of a new school construction authority, but we withheld the money unless the legislature would change some very restrictive trade union legislation that made the cost of building schools more expensive by about 30 percent. We wouldn't release our funds until the legislature had changed these laws. So you can do a lot with the incentive either of getting money or not getting money.

Mr. BORSKI. The gentleman from California, Mr. Mineta.

The CHAIR. Well, it never ceases to amaze me how you are always so innovative and able to come up with these various approaches, and I think this is the kind of suggestion that we have got to keep hearing. The only thing I am concerned about, Mr. Rohatyn, is that in 1978 we were thinking about—in fact we had an amendment on the Floor for—a 10-cent increase in the gasoline tax.

I remember when I voted someone said as I pushed the button, Norm, that is a good public policy vote, but it is a dumb political vote. I am not sure things have changed much since 1978. We had, I think, 89 yes votes for that 10-cent increase. Again, that was a two-step increase, 5 cents at each step. You are saying 2 cents per year over a five-year period. But the thing that is going to be required if we do this approach is that that item has to be off-budget.

I tried when I was chairing the Aviation Subcommittee in 1984, I guess it was, to take the Aviation Trust Fund off-budget, and I lost that by four votes. I think it was something like 197 to 201 or some vote of that nature on taking the Aviation Trust Fund off-budget.

The problem right now is that OMB knows they have a cash cow. Money comes in from a gasoline tax or the ticket tax on the aviation side and goes into the trust fund and all they do is throttle down on the spending, and that unobligated balance grows and they use that to offset the deficit in the general Treasury and we don't get the spending. So I think the key to that is to have this off-budget, because with your experience with trust funds now, from my perspective it is not working as well as it should because it really ought to be taken off-budget.

The other thing I would like to ask about is, in California every bond measure—and you used the one about building jails—every bond measure for a State prison facility has passed. The problem is that out of the $7 billion or $9 billion that has now been authorized for prison construction, about a billion dollars and a half of it has been used because there is no money in the State budget to hire the guards, to hire the people to maintain, to do the maintenance of the facilities or the secretaries and the others to operate the facility. I would assume that none of the bond funds could be used for operational expenses. Otherwise, we would get into what

I referred to when he was mayor in New York, we called it the Beame shuffle.

He was using bond funds to pay for the engineers and the other operational costs on a day-to-day basis. I thought 250 years later when you are still paying the interest on those bonds you are still paying for the engineer's salary 20 years ago. That created the problem that required you to come up with MAC. What about the operational side?

Mr. ROHATYN. Two points. First, I am fully alive to the problem of the gasoline tax. It seems to me now that we have reached a point in this country where we recognize that we need physical facilities that work that are civilized. We need schools, we need bridges, we need a railway system that works, we need airports, et cetera.

We need employment. I think downsizing by the private sector will continue relentlessly. That is not going away. It seems to me that a small increase in gasoline taxes that is clearly earmarked to produce physical facilities and employment is going to have a very different result than a gas tax that just goes to pay down the deficit or that just sort of disappears. I may be wrong and maybe that is because I am an optimist, but I do believe that.

Second, I think you have to be extremely careful when you talk about innovative financing. I have spent the last 35 years of my life in an investment banking house and most of the time, when I hear the words, "innovative financing," it is tomorrow's catastrophe, the junk bond market or Third World debt. What you are talking about is: are there sophisticated ways to finance that are responsible.

I don't know of anything that doesn't provide for its repayment privatization, but the money still has to come from somewhere. It will come from fees or tax breaks or from something else. At that point, the project may not become available to everybody. I think we have to face the fact that we have to finance these things, not on a pay-as-you-go basis. You should put it off-budget. You have some operating issues that come up. When we did come into the problems with the City of New York, we found that the mayor had burdened us with almost a billion dollars of debt by, in effect, pretending to finance mass transit while paying for payroll, and we had to undo that. So it seems to me that within the framework of such an organization, you would either write into the bond covenants or in a similar way, first of all, the equivalent of a depreciation fund so that you pay for maintenance and provisions for the adequate support of the facilities from an operating point of view.

I think, again, that can be done much more effectively if you have the management equivalent of a private organization providing the financing which can hold off the financing if the conditions aren't met by the public institutions that are receiving the money.

The CHAIR. On page 4, you say the only Federal budgetary cost would be the value of the guarantee and the IFC borrowing should be totally off-budget. Is there a scorekeeping issue here from an OMB perspective? Because, again, what we were trying to do here was to say look, there are a lot of good bargains available in the real estate market today and we ought to consider leasepurchase.

The problem is if we have a $100 million building to buy and let's say it is going to be $10 million a year for 10 years, just to

use a figure, that that was being score kept on the basis of the first year, so we had to come up with $100 million. Consequently, we are not doing any leasepurchasing here at all, and yet in terms of the GSA inventory of buildings, the needs still are there.

There are a lot of good bargains on the market right now that we ought to be able to snap up, but under a lease-purchase contract we can't do it because the scorekeeping says you have got to score that as $100 million the first year instead of $10 million. I wonder if your entity wouldn't run into the same problem of scorekeeping.

Mr. ROHATYN. Those are very important points that have to be dealt with in the charter of such an agency and the covenants of the bonds issued. I think it is possible to provide that you could finance lease-purchase projects by not counting the whole project as the investment in the first year, but requiring a capital reserve of, say, the first year's lease payment and an amount equivalent to the second year on a rolling basis as a capital reserve fund to provide for the orderly financing of that project, I think that is entirely possible.

The CHAIR. Thank you very much, Mr. Rohatyn. You have always been helpful and I have been working very closely with Mr. Gephardt on what approach we ought to be taking. We are hoping to do something by the fall of this year.

Mr. ROHATYN. I thank you for your leadership on this issue, which I think is a terribly important issue for this country.

Mr. BORSKI. Thank you. We have a call to the House and we will recess for a few moments and come right back.

[Recess.]

Mr. BORSKI. The subcommittee will reconvene. Mr. Flanagan.

Mr. FLANAGAN. Thank you, Mr. Chairman. It is an honor to have been invited to testify before you today as the Chairman of the Infrastructure Investment Commission created by Congress in the ISTEA legislation in 1991. I have some copies of our report here. I note that you have held four earlier hearings and have covered many of the issues that our commission had looked at as well, particularly the matters surrounding the decline of infrastructure spending in the country.

Our Commission, which included in its roster of members, former Secretary Neil Goldschmidt, then Texas Treasurer, but now Senator Kay Bailey Hutchinson and others, we held seven public hearings in the fall of 1992 with 46 witnesses from various financial institutions, developers, pension funds, project sponsors and public officials.

Our report was submitted to the President and Congress on February 23 of last year in this room, as a matter of fact. We have briefed the leadership of Congress and the Chairman and Ranking Members of the appropriate committees. We are excited about our recommendations; and that they will be considered in depth during the course of the reauthorization of ISTEA during the next two years. It is my pleasure to inform the members of this committee that on numerous occasions, perhaps 30 or more, I have been asked to give speeches around the country on the subject and the reception has been very positive. I think there is an intense desire to

provide for new opportunities for infrastructure investment, particularly private capital investment.

By way of perspective, I think it is worth noting that the major Federal infrastructure initiatives that began in the post-Cold War era have now reached a point 40 years later where there is a certain maturity. Recently, I had the pleasure of listening to a talk by Secretary of Transportation Peña about the 40-year-old vacuum tubes which are the principle element of our air control system around the country and his suggestions having to do with the Air Services Corporation.

Coincidentally, that is the time when the Federal Highway System under President Eisenhower, was initiated as were many other of your our Federal infrastructure activities. During that same period of time, most of the infrastructure funding in this Nation was devoted to either grant programs, at both the Federal and State levels or in the municipal bond area.

Interestingly enough, during the course of these speeches, it was pointed out to me by a World Bank panelist that not only was the United States the only nation in the world to provide for a municipal bond tax-exempt approach with a Federal tax subsidy for our infrastructure, but that the rest of the world was geared towards a project finance approach and we were not. Through this historical devotion to grant programs and municipal bond finance, which moves exclusively through the political process, we have inadvertently prevented the private sector from playing a role. What is that role? I would tell you it is taking risk, it is introducing new technology, and it is providing alternative innovative financing. Or I would defer to Mr. Rohatyn's earlier point, sophisticated financing. I agree with his comment.

The idea is to grow the pie. This is not an either/or but rather an additional outlet on the financing artery of infrastructure particularly in leveraging the Federal dollars and sponsoring direct capital investment. American pension funds can invest in infrastructure products overseas in China and elsewhere as there is the tradition of project finance.

What we need in this country is the equivalent. Because of our historical approach with tax-exempt status for pension funds, we have never taken the time to design an infrastructure product with a commensurate rate of return for this vast resource of capital. Chairman Mineta alluded to the same point earlier.

Accordingly, institutional investors look for those investment opportunities elsewhere.

I must tell you, Mr. Chairman, the American institutional investors want to invest in their own Nation's infrastructure; but they cannot because we have not given them the products. That is my underlying message here today. There should be no mandates. That is what we said in our report. The subject of economically targeted investing, ETI as it is called, is counterproductive. I often call it extra terrestrial intelligence.

The issue is not on the pension fund side. It is on the product side. What is needed in terms of the Federal and local governments is the recognition that credit enhancement, development risk insurance and other disciplines will get product to the marketplace. The financial institutions will do their own due diligence, which, inci-

dentally, brings other cost-effective disciplines and will make their investments accordingly. I welcome this opportunity to appear and I will now address the specific questions that were asked of me in your letter of invitation.

Question 1. The Federal Government would provide several tools to State revolving funds and those would be development phase (preconstruction) risk insurance, which is essentially coverage for architectural fees, environmental studies, permits, et cetera, against the various risks inherent in the political process. We do provide political risk insurance for American investment abroad through the Oversees Private Investment Corporation, but there is no such entity today on the American scene. Often times American insurance companies get confused because they will insure construction finance. We are talking about preconstruction finance, the toughest part of the infrastructure matrix. If we are increasingly shifting to revenue support of projects utilizing the user fee, there must be a public confidence factor involved. Therefore a premium-deductible purchase of development risk insurance allows for the entry of a community of interest around a project to stay the course and establish the user fee revenue stream.

With that user fee established through some public action, you then have the opportunity to provide the second tool; that is, to reinsure that user fee, thus providing the credit rating, credit enhancement for the project. All construction financing is done prior to construction. That is why these things are so important. This is all done as part of that preconstruction financing stage.

Once the project is up and running and generating revenue, the unique phenomena of infrastructure is that in the downstream years, the project only enhances its economic value.

The other recommendation to help in the preconstruction finance phase is to multiply the provisions in ISTEA having to do with subordinated debt as that may be necessary to complete the financing of a project, noting that the user fee will be in place eventually. There is no free money here. Fees premiums, et cetera, are paid to the corporation by the State revolving funds.

Question 2. As to the existing statutory framework, all of this requires a small agency to serve as the administrator of this program providing these tools to State revolving funds and hence the creation of a national infrastructure corporation is suggested. This would be a modest-sized entity serving as the financing intermediary with the States and ultimately taking the program to its next step, which is to sponsor with the States a securitization of these projects and a resultant secondary market for liquidity purposes to increase the opportunity for institutional investment. Pension funds come in different sizes, et cetera. Some will do their own due diligence, others would prefer to just purchase a security on the marketplace.

The testimony that the Commission heard from pension fund managers is that they seek diversification in their portfolios, and that they are prepared to do their own due diligence based on risk reward ratios. We would anticipate that the private sector would be co-investors in these insurance-type activities. We modeled our recommendations as to credit enhancement after the Federal sponsorship of Connie Lee which specializes in small college facility

financings. Indeed, they have leveraged $18 million of a 1985 Department of Education investment along with other private investment into $5 billion worth of current projects on their books.

Question 3. The National Infrastructure Corporation would offer three types of credit assistance for projects. Number one is being a lender of subordinated debt to project sponsors; establishing a credit enhancer to provide financial guarantees to third-party lenders; and providing insurance against noncompletion for development phase expenses.

Each of NIC's activities would require initial capitalization in the general Federal budget, but is expected to be self-sustaining thereafter. The Commission somewhat arbitrarily assumed that the split among these three programs would be 65 percent, 25 percent and 10 percent, respectively. The budget impact analysis should calculate the fiscal impact for each dollar that is appropriated to each program, allowing us to adjust the relative allocation of funds.

As to funding subordinated project loans, the corporation would fund subordinate debt at an assumed blended taxable and tax-exempt rate of 10 percent. Subordinated debt may be supplemented by public or private sponsor equity and could represent up to 25 percent of project costs. However, since the corporation itself acts as a revolving fund there is a multiplier effect of secondary loan activity generated by loan payments. The corporation would seek to monetize the remaining balance of its performing loans after five years' seasoning by borrowing against or selling off its portfolio, generating further lendable funds.

As to credit enhancement, the infrastructure insurance subsidiary would provide a primary insurance financial guarantee on debt service payments via the selected project user fee for infrastructure projects of triple B caliber, similar to what Connie Lee did. The credit enhancer could also provide reinsurance to existing bond he insurers to free up additional capacity for them.

As to development phase risk insurance, preconstruction, we assumed that NIC the corporation would insure the project sponsor against loss on development costs, with a 30 percent deductible; that is, we would give them 70 percent coverage. They would pay a premium. The amount of insurance written for any single project would be capped to prevent undue concentration of risk.

Question 4. As to obstacles to innovative financing, in my addendum, Mr. Chairman, I talk about the lessons of PURPA which was the Public Utility Regulatory Practices Act in 1978 and how through a certain Federal action having to do with a subsidy for cogeneration, an independent power generation industry was created, in essence market entry.

We always thought that utilities solely built power plants. We oftentimes find ourselves looking at a mature industry segment in our economy and look for a way to encourage private capital to reinvest and revitalize.

The obstacle with infrastructure is that it has been historically wedded to the political process and in a sense is a regulated industry. We addressed similar challenges in telecommunications, natural gas, and even electricity/power generation and the same applies to infrastructure.

As a result, the entrepreneurs who seek to invest in America's infrastructure, the architects and engineers are discouraged and will not move forward because of the lack of one-stop shopping. The National Education Association recently testified before Congress as to their desire for retirement systems to have the opportunity to invest in telecommunications infrastructure for schools. They have suggested certain approaches and funding techniques that are very similar to the recommendations in our report.

Question 5. In order to encourage innovative financing, the establishment of the corporation will be a very positive step. I mentioned earlier Connie Lee and the leverage of dollars. The private sector is certainly in a position to establish facilities for development risk insurance, et cetera. At a minimum, the Federal Government should begin a process to do likewise because we cannot afford the luxury of waiting any longer.

I don't think we want a command and control effort in terms of the design of the financing instruments. It is important that the marketplace be allowed to discern that. The fundamental problem is that entry into infrastructure financed primarily by private capital is the challenge and the goal.

Question 6. As to the appropriate governmental roles, the National Infrastructure Corporation would serve as an administrative agency providing the aforementioned tools. They would perform this task for their clients who would be State revolving funds. In order for States to participate in the program they would have to establish a revolving fund of a multi-agency nature, not exclusively transportation, so as to encourage project development in a variety of areas, including environmental, and to adhere to certain broad standards. It would be assumed that States could add additional funding to their programs; and I personally know that several States are considering that, particularly California. Therefore, we would envision State revolving funds serving as the project facilitator for these types of private capital financings.

Earlier studies such as Fragile Foundations endorsed State infrastructure revolving funds. It is practical that the State determine which of their projects can establish the appropriate revenue stream for certain developments.

Governor Blanchard, now the Canadian Ambassador, suggested to me several years ago that the tools available from the corporation would have allowed him as Governor to identify potential project revenue streams and would have given him the opportunity to then decide how to readjust his grant program tax-exempt finance strategies to deal with projects that could not garner such a revenue stream; for example, inner-city and rural areas.

It should be pointed out that the lenders for such projects, both for the short-term construction lending and the long-term financing, will expect significant information prior to and during the construction phase of the project. I have personally witnessed the scrutiny upon which such projects must undergo. When private capital is being placed at risk in construction finance, particularly in a situation where the revenue stream does not commence until after the construction phase has been completed, the lenders will be very exact in their requirements. This gives great security to the project because, unlike a grant program where there is 100 percent risk

to the government sponsor and no guarantee of on time completion, here there is every incentive to perform on time.

The Federal Government, as a result, in providing these tools to state revolving funds, takes very little risk. The lenders, and the credit rating agencies who are involved through the credit enhancement process, bring disciplines that in many ways provide self-insurance to the corporation's activities.

Financing by the Federal Government, in this instance, is essentially a one-time phenomenon as to equity investment in these insurance disciplines. Assuming significant success, Congress may want to increase the amount of financing. Once a project begins receiving revenues from the services being rendered, it no longer is part of the National Infrastructure Corporation Revolving Fund enterprise and is spun off to begin its commercial life thus allowing the resources from the corporation and the revolving fund to be replenished and to resume discussions of financing for other projects.

Finally, I can also assure you that, just as American firms are actively involved now around the world in energy and telecommunications infrastructure projects, with the experience of private capital project finance in these other modalities of our domestic infrastructure, those global markets will also enjoy American expertise.

Thank you very much. I look forward to your questions.

Mr. BORSKI. Mr. Giglio.

Mr. GIGLIO. Good afternoon. I was asked to speak to you about the charms of State revolving loan funds this morning and their relevancy to transportation. I am going to try to be brief regardless of how long it takes.

Now, I should warn you that asking me to talk about State revolving loan funds in transportation is a bit like asking Michael Jordan if he wants to try a new sport. So before coming here, I consulted with Michael about what I should tell you today. He told me that revolving loan funds represent a potential source of transportation infrastructure investment funds and they can be used without aggravating or exacerbating the budget deficit problem. Michael certainly has been keeping up with his economic literature. I think he is also right.

But before presenting my brief responding to the specific questions you asked me to address, let me make a few general comments about the mantra of need studies and the danger of placing too much reliance on need studies.

I think that a good number of need estimates that have been completed by various national groups, of which I have been an accomplice at times, are just not believable. In fact, they are unreal to most Americans and I suspect that the methodology that has been used has been flawed in many cases.

They reflect engineering standards and not cost-benefit analysis too frequently. The studies assume that technology and demand management policies remain unchanged, and they ignore the more productive uses of capital. So what I am suggesting to you is that when you look at this question of needs, that you remember don't trust any number with nine zeros behind it. Instead of simply looking at the physical condition of infrastructure facilities, I think we need to look at what public price the market will pay for a particu-

lar level of service over an extended period of time. Then we can start linking financing strategies with projects that have a market and provide benefits over a period of time.

In my judgment, the danger of focusing on the needs paradigm is that it inevitably leads to solutions that emphasize the Federal role over those of a more partnership or collaborative effort between Federal, State and the private sector. In my judgment, sure we have infrastructure needs, but not of the apocalyptic kind.

The risk is not so much falling off the cliff as it is of slow erosion. At the risk of getting too existential, the infrastructure issue, in my mind, is intractable precisely because it is tolerable. We should not allow needs studies to unilaterally dominate and shape the infrastructure debate and agenda.

As to State revolving loan funds, I don't entertain the conceit that they represent an unmitigated good and that each State should be mandated to create one to maximize infrastructure financing. Conversely, the concept of a State revolving loan funds is not a black art. It is not an esoteric science.

Revolving loan funds in one form or another have been around since the time of the Phoenicians. They are used to leverage scarce capital resources. The operative word is leverage. I am not talking about putting up a State transportation assets for sale in a series of leveraged buyouts so that investment bankers can plunder the public Treasury. Rather, leverage is the common clay of financial innovation involving the creation of supportable debt created by income-producing assets with dedicated revenue streams.

Leverage used in this fashion magnifies and accelerates the Government's capacity to invest in transportation infrastructure income-producing assets. Jane Garvey and Louise Stoll did a great job of describing capital financing in ISTEA. I think the most exciting capital financing opportunity in ISTEA is Section 1012. It offers the greatest opportunity for States and local governments to leverage State and Federal resources with not only the private sector, but with quasi-public organizations so that we can expand and accelerate the total amount of funds available for transportation infrastructure investment.

The first question—this is almost like a beauty contest, that we are getting selected as to who is going to do the next bond underwriting. How does it work? This is the part maybe where it helps to be an insomniac. There are two types of leverage funds.

Let me take the leverage proposal and try to relate it back to the provisions of ISTEA. A leverage revolving loan fund would involve, in the case of transportation, taking the Federal contribution, a portion of the STP funds under ISTEA and what we have proposed in Senator Baucus' bill is that you allow States to take the discretionary portion for their portion of the minimum allocation and that they would use that Federal discretionary portion to capitalize a revolving loan fund.

The State would come up with their corresponding blended rate of 20 percent from non–Federal sources. For example, is anybody here from Ohio so I can speak with impunity without fear of being contradicted—I think Ohio's obligational authority is $530 million this year. If Ohio were to take its discretionary portion of STP funds in minimum allocation, they would take $25 million and that

would be their Federal contribution this fiscal year. They would come up with a corresponding State share of 20 percent. You would then take that $30 million——

Mr. BORSKI. Would you please get closer to the mike?

Mr. GIGLIO. I got to be careful with this because the last time I did that I asked the question could everybody hear me in the back and somebody in the front got up and went to the back of the room.

We took $30 million, $25 million Federal, $5 million State, that under a leveraged concept what would happen for that fiscal year, because we know we cannot bind future legislation, that we would then go out and issue three to four times that amount of money in debt collateralized by that $30 million in receivable and we would put that money out in the form of loans.

What are the characteristics of the loans and why do I get excited about Section 1012? Section 1012 says that the eligible applicants for loans are public entities, quasi-public and private sector developers or sponsors. If you look at the loan characteristics, they are quite generous. The first provision under Section 1012 is that the loans do not have to be repaid until five years after the facility is opened for traffic. That deals with an issue we have heard about with monotony this morning, the first three-year start-up operation, preconstruction and with a little imagination you could probably redefine that five years to six or seven years if we started talking about the construction period as well as the operational period; so that the loan doesn't have to be repaid until five years after the facility is open for traffic and, indeed, I would argue that that is a much more generous provision than exists under the wastewater program.

Second, the term of the loan can be 30 years, again, a pretty generous provision. Third, the methods of amortization could be level debt service, it could be level principal, it could be a balloon. You can sculpture the debt service to a particular project, another powerful characteristic.

The repayments of those loans have to be spent for Title XXIII purposes, but they become State money. If the State wants to, in capitalizing that revolving loan fund or transportation bank, it can carve out a portion for surface transportation for highways and another portion for mass transit. It just has to be spent consistent with Title XXIII, another powerful provision.

The interest rate for that loan is based on the average rate earned by the States—I think what the legislation means is the States' short-term funds for the 52 weeks preceding the time of repayment. I want to come back to a technical change on that.

Let me—that leads me to the second question. How does the State revolving loan fund provide the necessary resources to meet backlog projects and future requirements? Let me count the ways. It is a reliable self-renewable, hopefully insulated source of capital and it gets you anywhere between two to four times leverage from the amount that you capitalize to the actual construction expenditures that go out while maintaining an investment grade rating on the securities. It attracts private capital. It accelerates spending when it functions as a leverage fund and it provides credit support

to those communities that don't have a strong enough tax base to be able to pay the tax cost or the public price for that service.

I am thinking in south Texas we have that problem. It is particularly crucial when we start thinking about implementing some of the NAFTA provisions.

Fourth, by encouraging toll facilities under Section 1044 it frees funds for other purposes, assuming you meet the maintenance of effort requirement. Remember Jane talked about that. That issue came up repeatedly, is that the law is saying that the more toll facilities you put in place, the more the gross revenues, assuming you don't dip below the three years' prior effort which applies against the soft match.

State budget directors ought to love this because it expands the amount of resources you have for other purposes. By providing credit enhancement, again it enables certain communities to access the market who have either never had to access it before but, don't have the credit support.

Finally, I think by imposing a fiscal discipline, loans have got to be repaid, that it supports the notion of efficiently allocating scarce resources. I want to come back to a point with maintenance, because I think the idea of tolls is a very important one. It is plain to me at least that maintenance historically in infrastructure has been shortchanged.

Senator Moynihan once made an observation when I was chairing the National Council on Public Works. He said the biggest problem is you ought to blame it on the Romans. I thought he meant the Sicilians, but he said the Romans should have built the pipes above ground, not underground so you could talk about developing a constituency.

I think one of the problems that we have had setting public price for public goods in this country is while in most cases hopefully we set that price to repay principal and interest and maybe even build in an inflation premium, we don't escrow a certain portion of that price whether it is for a subway or a highway for the maintenance. These assets use themselves up and we find that 15 to 20 years from now they have to be replaced and they have to be replaced completely. One way to deal with the maintenance issue is in how you strategically set the price for your services.

Question 3, can these financing techniques be further developed and successfully applied given the existing statutory framework? The short answer is, yes.

First, you have to broaden the definition of toll. And that is in the Baucus bill. You have to do it for two reasons. One, there are maybe 15 or 20 States that don't have toll facilities in this country. If the State of Arizona, Maricopa County, wants to increase a local sales option tax to be able to secure a loan, they don't qualify right now so you are shutting out 15 to 20 States and not giving them the opportunity to participate in this.

Second, I think that you will find particularly on start-up facilities that an alternative dedicated revenue stream, even a property tax or gas tax or tax increment financing, would be of more secure credit than a toll from a start-up facility or maybe even a system-wide pledge.

The part about a sales tax, to my mind, is a stronger credit from the rating agency and the market perspective than our talking about a new bridge that we are going to put up not as a replacement and we are going to assume that the demand is going to materialize. So I think you need to make a change about totals. I also think you need to make a change about interest rate determinations.

Currently, the law says you will set the interest rate for the loan a year before repayment period. I think you have to change that language and move it up to the time that the loan was given because the interest rate is going to impact the feasibility study.

I also think that you ought to structure 1012 in such a way that after you develop a primary market for those loans that you can securitize the loans and they represent an additional source of capital.

What obstacles hinder the further use of toll financing and State revolving loan funds capital? What can be done to overcome these obstacles? I can't really improve on what Jane Garvey said this morning, even if I said it in a foreign language. I think you have to start reeducating State Department of Transportation people about new methods of financing.

You got to understand, when I hear the expression, "innovative financing," I don't get an attack of shingles like Dan Flanagan. I want to reach for my guns because the fact of the matter is there are only two sources of revenues, user fees and taxes. If you look at most State DOTs, with the exception of a California, with the exception of New York State, you will find that most DOTs, State Department of Transportation people have grown up in an environment where funds came from the Federal Government, funds came through the issuance of general obligation debt, but was pay-as-you-go financing.

You have a generation of people there and what Garvey and Federal Highway is doing, and I am very excited about the progress they have been making, is they are engaging in a thought experiment. They are getting people to change their way of thinking. You don't have this problem with State term toll road organizations. You have a different problem there between State DOTs and State toll road organizations because they are in the market all the time and know how to structure these deals.

I think you have two other macro-problems. I think you ought to think about putting in some incentives, if you want to kick start the Revolving Loan Program. Federal Highway goes through every year and periodically does a sweep of unobligated balances. Maybe States that are considering or want to go forward with a State revolving loan fund, maybe what you ought to think about doing is taking a portion of that unobligated balance pool and helping them capitalize the revolving loan fund with that source.

Two, maybe you ought to consider the 20 percent hard match or a portion of that is wavered if a State thinks about creating a State revolving loan fund that is going to generate a source of self-renewable capital in the future. There is one danger with that. There is a difference between wastewater and transportation.

Wastewater revolving loan funds were put in place so that the feds could get out of the business. OMB, if I am sitting in OMB

and I were to look at how successful State revolving loan funds are, I think you got to be concerned about outyears—I don't know too many OMB types who have lived in the outyears—that in the outyears that maybe I start thinking about changing the funding formula, the matching or maybe I don't fund it as much. That is a trade-off you will have to deal with, but I think it is an issue.

What can be done to encourage use of financing techniques? I told you what incentives I would put in there. What infrastructure projects are using these financing techniques? What problems and successes? Wastewater, 50 States, $6 billion have already been put in place, but there was a different series of policy objectives.

Washington State passed legislation for a revolving loan fund; Texas has. A lot of States Jane was talking about have revolving loan funds as part of the innovative task force efforts.

What are the appropriate roles of Federal, State and local governments and the private sector in developing innovative and alternative financing? For the Federal Government I think it is leadership and it is a record of success. The exciting thing about evaluating 60 projects over 22 or 23 States is that if you pick a dozen projects and you make them work and you are helpful, success breeds success and I think it will spread like fire.

Also, I believe that the Federal Government is on the firmest ground when they are promoting new financing approaches for State and local government to increase capital spending for these areas without aggravating the budget deficit. I know this is a little bit like trying to lose weight when you live in a house that has a freezer full of ice cream and there are some serious fiscal disciplinary issues here as well as marketplace, but the efforts should not be narrowly confined to correcting alleged capital market inefficiencies.

Revenue inadequacy must also be addressed. Just as ISTEA encourages the use of toll facilities, and the Passenger Facility Charge Program was enacted in 1990, I think the Federal Government has to take a stronger leadership position in getting State and local government to understand that there are only two sources of revenue, user fees and taxes. California passes a major piece of transportation infrastructure financing, passes a half-cent sales tax increase local option to get it done. I think that is a recognition of what needs to be done fiscally.

I think it is probably time for me to shut down. I don't know if any of my comments will get the Good Housekeeping seal of approval, but I hope I didn't confirm your worst suspicions about investment bankers from Texas.

Mr. BORSKI. The gentleman from California, Mr. Mineta.

The CHAIR. Well, let me go back to, again, a basic question. What do we do about operational costs that are attendant to the investment that we make in the capital side? We construct the facilities, if they are toll roads that is one thing. That was the source of operational cost when I first became Chair of this subcommittee, going up to New York and taking a look at New York City bridges, versus the bridges that the Triboro Bridge Authority had. When Moses set up that authority, he had a financing stream and was able to set up his depreciation schedule and take care of all that.

The Williamsburg Bridge, for example at that point the mayor was about to try to sell it to Donald Trump, whereas the Triboro Bridge Authority, those bridges were in great shape. It is like Golden Gate Bridge. Today that is probably as good as when it was built in 1937.

Mr. FLANAGAN. I remember when that was a bridge district and then became a transportation district.

My answer that I would give is that in the projects that we are talking about that would lend themselves to a revenue stream credit enhancement scenario, you are looking at private capital investment. You are looking at lenders and they are going to demand in their, covenants, that the elements of maintenance be a part of that financing.

As far as operations, that comes as part of the cost of rendering the service and should not be part of the borrowing process whatsoever. But I must emphasize that when you are going after a S&P credit rating, you have to do certain things to satisfy private capital investment and it is a tremendous discipline.

Unfortunately, while you see it in independent power and other infrastructure elements here and overseas, we haven't had those disciplines in generic infrastructure to date here in the United States because we grew up, as I said earlier in my testimony on grant programs and municipal bond finance, which don't lend themselves to this private capital investment discipline, and that is one of the reasons why I think entry is so important.

Private capital encourages innovation. Private capital will not invest in the old cookie-cutter model. They are going to look for the new cookie cutter. There will be incentives because if you can come up with a better way—and that is part of the Fragile Foundations Report—we are behind the Japanese to a certain extent because we are not there on the technology side. We are great in systems management, but we aren't there when it comes to new investment, new technology. I think private capital coming in will encourage new technology and that is one of the ways you address the maintenance issue.

Mr. GIGLIO. Let me make a couple of comments. Dan is absolutely on the money when he talks about the rating agencies. If you come in on a financing, one of the issues that rating agencies are going to look at is they are going to look at the management component and your ability to fund the operating side, which gets back to the life cycle pricing issue. But I think that you ought to keep in mind that the powerful thing about the capital markets, whether it is the muni market or if it is fixed income, is that when you commit an indiscretion in the marketplace you pay a penalty. Either you get shut out from the market or if you come back in, you got to pay a serious penalty.

I think that for a good number of State and local, particularly municipal projects that that indirect sanction is what keeps them straight, even a place like New York City. It was interesting when he was earlier talking about the 1976 crisis. It seems to me that New York City is always in a fiscal crisis, which gets me back to a point about your bridge issue in New York City. There are four free east river bridges going into Manhattan. At one time they

were all tolled. The tolls were taken off in 1915. That is an extraordinary statistic. I am not making it up. It is true.

The CHAIR. They were built in 1897.

Mr. GIGLIO. Exactly. My grandfather probably worked on it. There have been estimates that if you retoll those bridges it would generate about $250 million annually. That could go support eight or nine orphan bridges in the Bronx, take care of the maintenance on the Williamsburg and the others. Also the Intelligent Vehicle Highway System technology is in place today that would satisfy environmentalists.

We could also introduce congestion pricing for people that want to take one bridge and be in midtown Manhattan in half an hour if they want to pay 10 bucks or whatever it is. I don't know where politics begins and economics ends or maybe where economics begins and politics ends on these, but we have assets and resources that can finance this. The question is are we up to the political challenge.

The CHAIR. Part of that political challenge is whether or not we would be creating a two-tiered system so that the rich have the ability to drive the toll roads and get there half an hour earlier and me having to take the city streets and consume more gas and the time it takes me to get from here to there and the other folks getting on the toll road.

Mr. GIGLIO. I agree with you and that is an invidious issue. I could take you to McAllen, Texas and go over the local bridge between 3:00 and 7 o'clock and everybody beats their chest and complains about congestion. The flip side of that is extraordinary vitality on the border. You throw a brick out the window today and a building goes up tomorrow, and it is long overdue.

Everyone talks about we have 22 bridges on the border going from Brownsville to El Paso, and everybody keeps saying that we need additional physical capacity, and some of that is true. But one way to get immediately additional capacity is to change the pricing structures. It is a trade-off. It does create that kind of invidious comparison, but trade-offs are a question of how much of one thing I have versus how little of something else and that becomes a political decision.

Mr. FLANAGAN. In our report, we pointed out—as did our testimony—that if you can isolate those projects that can support a revenue stream, e.g. a retolling of a bridge, you have the opportunity to grow the pie because that allows you to reallocate other resources to the rural or the inner city areas where you could not garner such a user fee. So it is not an either/or game; it is a growing the pie game. That is the way Governor Blanchard saw our report. He saw these as tools so if he could bring private capital in one area because he saw the project could stand on its own merits, he could have reallocated his grant monies to the other geographical areas in a State that never could have supported that.

The CHAIR. Using the Brooklyn Bridge or the Harlem Bridge or the Williamsburg, maybe if those were retolled they don't mind paying for the toll if it is going to go for the maintenance of that. Say if they are using the Williamsburg every day and are paying the toll there, but they know the revenues will go to build a second Verrazano Bridge, I wonder if they would buy that?

Mr. FLANAGAN. If they think the user fee is going to be used for other purposes than the service that they are buying, they are opposed to it. But if they feel that they are getting the service for their money, they are willing to go forward on that project. But you have to make it very clear. That is why development risk insurance is so important. Because right now the people that might have an idea about rebuilding the small bridges of America, all their time and efforts, architectural planning, environmental permitting, they cannot insure that risk. It is all their own investment. So if we gave them development risk insurance, which, frankly, I think the insurance industry would eventually start doing themselves, but right now they don't offer it we can make things happen now.

The insurance industry offers construction risk, e.g weather delay in project construction, but nothing in terms of the risk that you take in evaluating a project. Once you have that in place, I think you will get to a point of public confidence on the user fee because there will be public discussions about what they are getting for their money.

Mr. GIGLIO. People that use the Triboro Bridge and Tunnel Authority, motorists, I think it is commonly acknowledged in New York that a portion of that is being used to support the mass transit system. To retire the debt that was issued supported by fare box revenues, as implausible as that sounds, is being used to subsidize mass transit because I think that people recognize—it is the whole user fee. The beneficiary pays plus we are one indivisible country with positive spill-overs, as my economist friends like to tell me about.

I think that cross-subsidization takes place. It seems to me that one of the powers of a State transportation bank or revolving loan fund is if you really want to exploit the flexibility of ISTEA is to be able to right from the beginning carve out a portion of that transportation bank to be used for transit as well as it gives you the ability to take successful projects and subsidize those projects that typically don't have access to financing.

One of the challenges we are going to have on the border is we know we have all got to make these investments in infrastructure whether water or transportation, but we also have a pay-back period, the break-even point gets pushed further out because the per capita costs of constructing there, given the lack of density and the corresponding consequent per capita price is too exorbitant the first 5 or 10 years. So we will need to be able to subsidize those projects for a period of time and the transportation bank gives you an opportunity to do that.

Mr. FLANAGAN. Another virtue of the State revolving fund, as we talked about the learning curve at State DOTs. Is that they can help accelerate that learning curve because if you see the disciplines and the inducements that are available through the revolving fund, then I think the State DOTs will move forward.

The CHAIR. Is their any way to retrieve the value where there is an increase in value—for instance, we use FTA, Federal Transit Administration funds to build Metro and yet it is Charles O. Smith who builds the building that Metro gives value to—a 140,000-square-foot building or something. Of course, that benefit also goes to the City of Alexandria in the form of increased property taxes.

How do we retrieve some of that value back to the FTA pot for example into a revolving fund so we can use it somewhere else?

Mr. FLANAGAN. Your point is a good one. The problem with revolving funds is that they have been primarily recycling public finance dollars. They have never incorporated private capital investment. If you look at opportunities to spin off some of that obligation and refinance it, you might be able to bring in private capital to take over some of those borrowings.

I was in Sacramento two months ago when they were working on their infrastructure development bank that they had in mind, and we were talking about a revolving fund. I pointed out it is fine, but all you are doing is recycling public monies. You need to start looking at how to bring in private capital.

The CHAIR. Thank you very much.

Mr. BORSKI. I want to thank our panelists very much for their help today. We will ask the next panel to come forward. We have Joseph Bendel, Council Member of McKeesport Pennsylvania, President, Pennsylvania League of Cities; and Terry Agriss, President, New York State Environmental Facilities Corporation, President, Council of Infrastructure Financing Authorities.

Miss Agriss, let me ask you to rise and raise your right hand.

[Witnesses sworn.]

Mr. BORSKI. Thank you very much. You may proceed.

TESTIMONY OF JOSEPH BENDEL, COUNCIL MEMBER, McKEESPORT, PA, PRESIDENT, PENNSYLVANIA LEAGUE OF CITIES REPRESENTING THE NATIONAL LEAGUE OF CITIES; TERRY AGRISS, PRESIDENT, NEW YORK STATE ENVIRONMENTAL FACILITIES CORP., PRESIDENT, COUNCIL OF INFRASTRUCTURE FINANCING AUTHORITIES

Ms. AGRISS. Mr. Chairman, I am Terry Agriss. I am President of New York State Environment Facilities Corporation and given the discussion we have just had, I should note that I take the free Willis Avenue Bridge rather than the Triboro traveling between New York City and Albany.

I am very pleased to appear before you today not only on behalf of the New York State Environmental Facilities Corporation, but also as President of the Council of Infrastructure Financing Authorities. The Council of Infrastructure Financing Authorities is a national organization of State and local authorities whose missions are to finance public infrastructure facilities.

Most of our State members manage at least the financial component of the State revolving loan funds for wastewater pollution control and as such are vitally involved in the current and future success of the SRF program.

Consequently, I am very pleased to respond to your request to testify today on the States' revolving loan funds and the role they currently play and the role they might play in the future in providing innovative financing for our nation's infrastructure.

The SRF program for wastewater is a public finance success story. In spite of lip service paid to the concept of innovative funding mechanisms for infrastructure, the SRF for wastewater control is the single innovation to emerge in the area of Federal capital financing. Its application to financing our Nation's wastewater treat-

ment needs is a uniquely innovative process that has leveraged limited dollars into a substantial loan pool with a capacity to fund billions of dollars of projects well into the 21st Century.

From our experience with this financing innovation, we believe it has applications to other areas of public finance, including drinking water facilities, solid waste and transportation facilities. The revolving loan fund has been adapted to meet wastewater needs and as such is especially well-suited to providing Federal financial assistance in time of relative fiscal austerity. The concept and application of the SRF is simple.

Basically, the Federal Government contributes seed money and the States match it. In turn, these funds can then be leveraged through the sale of tax-exempt bonds in the private capital market, making a lending pool which, if properly managed, can provide a source of low-cost capital for project finance in perpetuity.

Since 1989, the Federal and State contributions that have been received by the New York State revolving fund has totaled $800 million, which together with proceeds from investment earnings and leveraged municipal bonds has generated more than $2 billion worth of projects that we have used for 148 loans for water pollution control.

The ongoing repayment of these loans over their 20-year lives will continue to free up capital and that can be used again and again to finance more infrastructure at below market rates. Nationwide the picture is equally impressive. These figures, while not exact, because we do our surveys once a year and, unfortunately, we had used numbers going back to June of 1993, while not exact, they convey a pretty accurate picture of how well the SRF is working to provide low cost financing nationwide.

With SRF's now operating in every State, plus Puerto Rico, approximately $8 billion of Federal capital grants have been awarded. These Federal dollars have been matched with over $2 billion of State funds and nearly $4 billion in leveraged monies for a total of $14 billion of lending to finance over 2,000 municipal treatment projects.

Moreover, the repayment streams on loans outstanding is expected to exceed one-half billion dollars this year already, and those monies can then be used as they are freed up to be relent at preferred rates for new capital projects.

Can the revolving loan funds meet our present and future needs for wastewater treatment whose needs are now estimated at $130 billion? With limited State and Federal contributions and careful management on the part of the States, the answer is, yes, we believe the SRFs can.

For example, if the SRF were funded at $2 billion a year for an additional 12 years with the existing 20 percent State match and a leverage factor of two to one for about 60 percent of the funds, a loan pool would be created capable of financing $133 billion in projects over the next 20 years. I have attached a table to my testimony that indicates this.

But, basically, what we are seeing—and it goes to some of the comments you have heard earlier today—is that we need to finance the revolving loan funds to a point where they can be self-sustaining at a constant dollar amount. Since the wastewater SRFs are re-

quired to make loans of a maximum of 20 years post-completion, it means that the average life of our loans right now is about 12 years, which is why we have used that number—saying that we need to capitalize the SRFs at a constant dollar amount for about 12 years.

With this kind of self-sustaining capability, we believe that the Federal Government can provide the initial capitalization and then essentially get out of this business for the revolving loan fund. Where else can you get that kind of return on a Federal investment?

Let me go through some of the advantages of loan financing. We have heard a lot today about how the SRFs are working and how the SRFs might be used for transportation, but I'd like to go through why you might want to focus specifically on SRFs as a loan mechanism, as opposed to what some people continue to talk about, which is maybe we ought to go back to grants.

The GAO, for instance, has recently suggested maybe we really ought to look at grant programs. While we appreciate particularly that some municipalities argue that grant assistance is preferable to a subsidized loan, there are sound reasons in terms of economy of national expenditure and efficiency of project financing, for Congress to maintain SRF-financing approaches and resist entreaties to go back to the grant approach for Federal support.

Let me go through a couple of reasons why this is true. We believe loans provide assistance to more projects, partly because the same amount of Federal money simply goes farther with a Federal loan program. This can provide additional financing to more communities throughout the country. We can provide a loan pool that is capable of financing a much larger share of project needs than a grant program at a Federal share of 55 percent or higher.

We have looked at this pretty carefully—particularly in contrast to the old construction grants program for wastewater projects. And while the wastewater construction grants program was providing 55 percent grants, it was to limited types of facilities, and it clearly was not providing a community's full needs, even for a 55 percent share.

The SRFs, on the other hand, really have much broader eligibilities, and we are able to finance a much broader array of activities in a community than we ever could have under the grant program.

In addition, comparing the scenario I described just a moment ago which would create a loan pool of 133 billion from a Federal capital contribution of an additional 24 billion—2 billion over 12 years—the same Federal dollars directed to grants would finance only 44 billion in wastewater projects at a 55 percent grant program, which is less than one-third of the amount that could have been funded by the SRF programs.

Also, loans limit future Federal exposure to funding. As I noted, because there is a 12-year average life of our loans, it really means that with a continuation of the SRF capitalization by the Federal Government, the Federal Government, after the full capitalization period, could essentially eliminate its contributions and we in the States would be left with an ongoing program that would be able

to continue to make loans at a base amount equivalent to a minimum of $2 billion a year.

I might note that that does not include an allowance for full inflation, and that's something that you may want to consider; that there would be some minimal ongoing investment in terms of just keeping up with inflation. Loans are more efficient.

We have heard a little bit this morning about the fact that SRFs are good in that they make the recipients of the loans pay attention to what they have gotten. Our experience with the SRF has demonstrated this pretty carefully. Greater local responsibility under a loan program results in lower project costs and encourages communities to build to meet their actual needs rather than building to meet grant requirements. Let me give you one example.

In 1989, the town of West Monroe in central New York was considering building a sewage treatment system, and in 1989 they determined that they would build a low pressure sewer system and treatment facility using $650,000 of SRF loan monies and a $45,000 State grant. In contrast, that same town a few years earlier had been anticipating a Title II Federal grant, and at that point had planned a facility to achieve exactly the same environmental purpose, but would have cost 1.25 million, which is, as you can see, almost twice as much as the project they eventually decided to build because, in fact, they had to repay the loan.

The record is replete with those kinds of examples.

Also, it is not a small thing to note that loans are more efficient to manage from a Federal and State perspective. This can significantly reduce the manpower requirements for Federal supervision, compared to what had been true with the old grants program.

Since 1987, we're led to understand that total staffing in EPA's wastewater and enforcement compliance program has been reduced by more than 100 full-time equivalents, FTEs, reflecting, in part, a shift from grants to loan management. Reductions in the Federal work force surely are not an insignificant consideration, given present budget constraints.

Also, loan funds—loan-funded projects are built more quickly. Because SRFs can fund the total cost of most projects, they remove the need for communities to raise additional financing necessary to cover their matching share of the grant plus the nongrant-eligible components of the project.

Moreover, with full availability of financing, projects are being completed up to 50 percent faster now under a loan program than under the grant program. There is no waiting on grant priority lists or for EPA grant reviews.

As you know, there is an old adage in the construction industry that time is money, and expedited project construction leads to substantial savings. Also, loan-financed construction occurs more quickly because the loan program does not penalize communities that start their projects in advance of a loan.

Since the SRFs allow loan refinancings, municipalities are encouraged to begin the design and construction plans when they are ready. Costs of planning and design can be refinanced under the SRF program so the borrower does not risk forfeiting future financial assistance by beginning the process early.

Since many SRFs have adopted a policy of immediate loan availability, there is no need in many instances for a municipal borrower to arrange any separate interim financing for a project, thus avoiding up-front additional financing costs. States with large needs have been able, as I've noted earlier, to leverage their available loan funds and are operating under a policy that any project can be financed when it is ready.

I will note with some dismay right now that while leveraging can double or triple the available assistance under the loan program, in New York, because the Clean Water Act is in some trouble, I should note, and if it fails to pass this year in New York for the first time we will face a real shortage in the capitalization of our SRF, and we will be required to turn down projects. We will not be able to finance the full needs of the State, which up until now, because we had been receiving the capitalization, has been available to us.

And I should note that New York State has leveraged between two and three times our Federal dollars, and it has been aggressive in trying to meet the full needs of our communities.

The application of the SRFs to other types of infrastructure financing needs, we believe, has real potential. The Council of Infrastructure Financing Authorities has recommended the creation of an SRF loan fund for financing solid waste facilities, for example.

We have also been very actively involved in advancing President Clinton's proposal to extend the SRF financing mechanism to meet safe drinking water facility needs. This proposal, embodied in the legislation that has already passed the Senate and is under consideration in the House, will go a long way toward addressing the needs for expanded and improved drinking water treatment.

I should also note that some of the discussions—on the prior panel had to do with additional private investment in infrastructure.

One of the aspects of the safe Drinking Water Act as it passed the Senate that we find very attractive is that not only could municipal water supply systems receive financing from the new SRF embodied in the Safe Drinking Water Act but also private water supply companies would be eligible to similarly receive SRF benefits, and we think that is a very important additional innovation in the safe drinking water SRF that we certainly urge your support of.

Additional areas of application for the SRF mechanism, as we have certainly heard this morning, can be found in the provisions in the ISTEA legislation from 1991.

While undoubtedly there are some limitations in the transportation area that don't seem to have been identical to what we found in the wastewater area, we believe that there are many opportunities for using revolving funds in the transportation area.

And we believe that our experience through the Council of Infrastructure Financing Authorities that we have with the wastewater SRFs in making the transition from grants to loans, which I think is one of the reasons you haven't found overwhelming receptivity among States for an ISTEA type of revolving fund could be helpful. We already have the experience of making that transition, and it

might be instructive as to why there has been some delay in getting the ISTEA revolving funds up and running.

Our members would certainly be very pleased to work with both Federal DOT and our State counterparts to familiarize them with the way that the SRFs are running and to lend our assistance in their implementation.

Other potential applications of the SRF are public facility financing which can be found in a 1992 report prepared for the National Institute of Justice, identifying revolving loan funds as an efficient model for funding correctional and other criminal justice facilities.

And also, I know in my own State, we have had some discussions about using SRF type of financing for local health care facilities. And we think that may hold some promise.

In closing, I should note as a State administrator of the wastewater revolving loan fund, I would be remiss if I did not remind the Committee that the future continuity of Federal participation in the SRF rests squarely with the House Public Works Committee, where reauthorization of the Clean Water Act and SRF provisions are pending.

Authorization for SRF financing under Title VI is exhausted and, as you are aware, the Appropriations Committee has indicated that future appropriations will not be available without additional legislative authority. We urge the committee to move forward on this very important reauthorization of the Clean Water Act as a way of maintaining the Congress' really laudatory investment in infrastructure financing. A failure to provide the new authority in additional funding will seriously cripple the future capability of the SRFs, which are not currently fully funded, and we certainly urge your attention to this.

Thank you very much for the opportunity to testify, and we would be pleased to answer any questions you may have.

Mr. BORSKI. Thank you very much, Miss Agriss.

Mr. Bendel, let me ask you to rise so I could swear you in.

[Witness sworn.]

Mr. BORSKI. Thank you, sir. You may proceed. Mr. Bendel, do you have a statement?

Mr. BENDEL. My name is Joe Bendel. I am a Councilman from the City of McKeesport, Pennsylvania. We're about 12 miles southeast from where the All-Star Game was played in Pittsburgh. And you're in the other end, Philadelphia, Mr. Chairman.

I am also serving—recent elevation—as the President of Pennsylvania League of Cities. I'm very honored to represent not only the Pennsylvania League but the National League of Cities, which represents 150,000 municipal elected officials from about 16,000 cities across the country, directly and through membership in State municipal leagues.

These cities range in size from New York City and Los Angeles to Sun Valley, Idaho, with a population slightly more than 500. Consequently, NLC represents the oldest and broadest spectrum of citizens of any public interest group in the Nation.

I am sure that the Members of the Committee have firsthand understanding of the problems and opportunities facing local government, which serves, really, a common constituency at the local and

Federal level, and those citizens are the ones that vote and utilize the services throughout this great country.

We appreciate the opportunity to testify before you on the need to rebuild our Nation's public infrastructure. Our highways and bridges, water and sewer facilities, port and transit facilities can truly be said to represent the vital underpinnings of our economic and governmental system. Without their certain and efficient operation, the life and commerce of our Nation would not exist.

While the recognition of the dismal state of our public infrastructure is not new, these hearings are nevertheless very timely. That the Nation's economic strength depends to a great extent on the quality of that infrastructure is an issue that cannot be disputed. Earlier this year, our members and board of directors selected investment in public infrastructure as one of NLC's top five action agenda issues for 1994.

In our fiscal survey released recently at the National Press Club, we reported that infrastructure needs were the second most adverse factor affecting local budgets and economies this past year, just behind the rising costs of health care benefits and ranked even with the cost of complying with unfunded Federal and State mandates. In fact, Mr. Chairman, our survey reported that for small cities, the single most unfavorable factor causing fiscal problems came from infrastructure and capital needs—much more than crime, health care, or mandates.

I have brought copies of the report for the Committee to assist you in your leadership on this issue, and they are available.

[The information referred to has been retained in the subcommittees files.]

Mr. BENDEL. There can be no question that public capital investment is the cornerstone of local economies and will be critical to the competitiveness of our national economy.

In the wake of a continuing decrease and underfunding of infrastructure investment, innovative and alternative infrastructure financing techniques are the route that cities must take. In recent years, financial responsibility for infrastructure has increasingly become the burden of the Nation's cities. Local governments now provide more than half of more than a hundred billion spent each year to build, maintain and operate our systems of public works. This is up 38 percent from 20 years ago. The budgetary pressures faced by Federal and State governments mean this financial burden will continue for the foreseeable future.

Currently, there are billions of dollars in needed public works projects waiting for attention around the country, attention that Federal funding has not been able to provide. These local conditions have only been exacerbated by the depleted local treasuries that are unable to meet infrastructure needs. This burden has encouraged cities to find new ways to finance public works services required by their residents and local businesses.

As the responsibility increasingly falls to the local government, cities as different as Indianapolis and Escondido, California, have developed innovative, alternative infrastructure financing techniques suited to meet their individual infrastructure needs. I am not going to go into them. You have the written outline of what

each of those communities have done, and they are a matter of the written record.

Federal capital investment is lower than any competitor nation of the industrial world. This proportion of the Federal budget going to capital investment continues to decrease. It is clear that over the longer term the Federal Government must come to terms with entitlement spending in order to halt the erosion of capital investment. The continued disinvestment has clearly affected local governments, especially smaller cities. Reversing the trend is one of the highest priorities of our organization.

While local governments create innovative and alternative infrastructure plans amidst the era of reduced Federal assistance, the disparities in tax bases and the pressure from crime, unfunded mandates and health care make clear that the Federal Government can play a powerful positive or negative role in helping cities to make necessary investments in infrastructure.

The Federal surface transportation act, ISTEA, is an example of a positive partnership. Recent changes in the Federal Tax Code, proposals to change the Airport and Airway Improvement Act, the House passage of telecommunications infrastructure legislation and proposals by the Federal Securities and Exchange Commission are all examples of Federal actions which can interfere with innovative local infrastructure. We would look forward to working with the committee to address all these issues in a constructive manner.

The Intermodal Surface Transportation Efficiency Act of 1991 was one of the few bright lights for cities. The $151 billion in Federal transportation funding will go a long way in helping cities move forward in infrastructure development and economic viability. We have provided some examples in the State of Washington and also in Texas, where these programs have been used most effectively.

As existing legislation like ISTEA gives local governments a much-needed boost in infrastructure financing, proposed legislation like Representative Coyne's Public Finance and Infrastructure Act of 1993, that's H.R. 3630, will continue to build upon the city programs.

Designed to make projects like the Indianapolis Neighborhood Savings Bond program easier for cities to establish, H.R. 3630 proposes to change the Internal Revenue Code to increase the usefulness of tax-exempt bonds in meeting State and local government capital financing needs. The legislation will streamline the definition of tax-exempt private activity bonds, simplify the existing arbitrage of rebate requirements, increase small issues exemption for banks' deduction of interest and establish a new type of tax-exempt private activity bond.

But most helpful for local governments is H.R. 3630's provision that will create the Community Economic Development Bond, an aid targeted at economically hard hit communities. These bonds should provide communities of all sizes with the necessary means to foster economic growth and create new jobs. These bonds would help hard hit communities through a time when local governments find themselves without sufficient resources to make important long-term investments.

We are delighted at the majority support for the legislation on the Ways and Means Committee and strongly urge cosponsorship from your committee.

We are concerned that efforts to devise and impose new requirements are raising doubts in the minds of investors about already outstanding bond issues of smaller municipalities and less frequent users.

We are apprehensive that efforts by the airline industry would set adverse precedents for all public infrastructure. The Senate has passed and sent to conference with the House legislation to reauthorize airports and airways legislation, Senate bill 1491. That version includes a key, unprecedented provision permitting the Federal Government to levy up to $50,000 a day in civil penalties on cities and towns. Current remedies for failure to comply with grant conditions permit cutting off all grant funding or prohibiting a city from applying for new grants. The Senate proposal could set a precedent for all and any Federal grant programs to cities of our Nation.

We strongly urge you to reject the Senate civil penalty language. Airports are critical to maintain competitive local economies. Federal intervention and Federal civil penalties can only provide a disservice to growth and opportunity.

I might just say that post monitoring of any kind of program by Federal officials or bureaucrats leaves the elected officials at their mercy.

Our Nation is on the verge of an infrastructure revolution. The investment of more than $300 billion in construction of an information superhighway is now under way. This new system will reshape the Nation's cities and will affect nearly 15 percent of our national economy or one out of every six jobs by the year 2000.

As passed by the House, however, this huge infrastructure undertaking largely preempts local governments.

The House overwhelmingly passed the Energy and Commerce Committee telecommunications infrastructure legislation, H.R. 3636, preempting local authority and potentially costing cities millions of dollars in revenues. The bill, sponsored by Representative Markey, Chairman of the Telecommunication and Finance Committee, and Representative Jack Fields would allow local telephone companies and cable television companies to enter each other's business.

H.R. 3636 includes no role for local governments. It preempts State and local authority. The bill would provide no authority for cities and towns to have franchise agreements in order for phone companies to provide cable service.

While we have hopes and will make every effort to ensure that the Senate is more responsive to providing for a public role in the construction of this new highway system for communications, we note that the House bill would deplete scarce local capital investment resources and remove cities from any role in how and where the construction occurs. We would hope this committee would consider playing an active role in seeking a stronger outcome in any conference with the Senate later this year.

Finally, I want to urge the committee to consider the potential impact of proposed rules and regulations by the Securities and Ex-

change Commission. The Commission has proposed a system of current and continued disclosure by cities and towns about our bonds used to finance nearly 80 percent of the country's public infrastructure. The rules have been issued to protect private investors.

But filing all these reports will be quite costly. It will cost local governments money—which will have to be paid either by reduced spending for public infrastructure or by higher taxes and fees. As we near November, I know that each Member of this committee is all too aware of how difficult it is to raise taxes.

The Securities Commission is charged by Congress to regulate the securities industry and to protect investors. It has no charge and has taken no effort to consider the impact of its proposed rules on taxpayers and public units of government. Because the rules are complex, few in the Congress have thought about them—maybe present company excluded. But just as States and local governments last year remitted $300 million to the Internal Revenue Service in arbitrage payments, the Commission's proposed rules will similarly divert scarce public resources away from innovative public capital investment. Again, we might just say, if it's not broke, why fix it?

We believe it would be helpful for the subcommittee to request the Commission to delay any final promulgation until it has completed a cost-benefit analysis and provided the subcommittee with an evaluation of the potential impact on public infrastructure financing. The Commission has been unable to provide any examples of general obligation or municipal revenue bonds where city elected officials deliberately misled investors. The Commission claims it needs the new rules not to prevent current abuses but to protect against possible future abuses.

Quite honestly, Mr. Chairman, we are more concerned about abuses against public infrastructure investment at this very time, and we join anybody that would prosecute anybody that abused them.

To close, Mr. Chairman, our fiscal survey demonstrates that city fiscal conditions are improving. It shows that cities are managing, balancing their budgets in tough times. It demonstrates we are innovative in finding ways to meet public needs, even with the strong pressure from health care, crime and unfunded mandates.

In addition to just the formal concern in this presentation, the other thing that we have noticed and sometime is forgotten, that we have already made a heavy investment in public infrastructure in the older city, and sometimes that infrastructure is not being fully utilized because of the uncontrolled growth in the suburban areas around our core cities.

Our report shows clearly that financing public infrastructure requires a partnership with the Federal Government where the Federal Government enhances rather than obstructs our ability to make needed investments. We are grateful for your interest, look forward to your report and recommendations and stand ready to respond to any questions you might have.

Mr. BORSKI. Well, I thank you very much, Mr. Bendel, Ms. Agriss.

Let me suggest, if I may, that we submit some questions to you in writing for your response. And thank you very much for your coming here today, journeying here to Washington, D.C., to help us out. Your testimony was very informative and helpful.

But, again, in deference to our next group who may faint from hunger before they come on, perhaps we'll do the rest of this in writing with your permission. Thank you very kindly.

On our fourth panel, we will have Mr. William H. Allen, Principal, Dewberry and Davis, representing American Road and Transportation Builders Association; Mr. Richard L. Foster, Chairman, Chief Executive Officer and Treasurer, PFK–Mark III, Inc., representing the National Utility Contractors Association; and Mr. Anthony Ziccardi, President, K. Hovnanian Company of South Jersey, representing the National Association of Home Builders.

I ask you gentlemen to remain standing for a moment, so I can swear you in.

[Witnesses sworn.]

TESTIMONY OF WILLIAM H. ALLEN, PRINCIPAL, DEWBERRY AND DAVIS, REPRESENTING AMERICAN ROAD AND TRANSPORTATION BUILDERS ASSOCIATION; RICHARD L. FOSTER, REGION 2 VICE PRESIDENT AND CHAIRMAN, GOVERNMENT RELATIONS COMMITTEE NATIONAL UTILITY CONTRACTORS ASSOCIATION; AND ANTHONY V. ZICCARDI, PRESIDENT, K. HOVNANIAN CO. OF SOUTH JERSEY, REPRESENTING NATIONAL ASSOCIATION OF HOME BUILDERS

Mr. BORSKI. Thank you. Mr. Allen, lead off, please.

Mr. ALLEN. Thank you. Mr. Chairman, my name is William H. Allen. I am a principal in the engineering firm of Dewberry and Davis. I am a past President of the American Road and Transportation Builders Association's Public-Private Ventures and Transportation Division. In that I was born and raised in Philadelphia, Mr. Chairman, I believe you'll find my remarks particularly compelling today.

It is a distinct honor for me to appear before you today and share the views of the American Road and Transportation Builders Association on infrastructure financing. I would like to take this opportunity to commend the committee for holding a hearing on this matter and for framing the issues that it would like addressed in such a clear and insightful manner.

By way of introduction, the American Road and Transportation Builders Association was founded in 1902. It's the only national association which represents firms and individuals engaged in the planning, design, construction, financing and operation of all types of transportation facilities.

ARTBA's Public-Private Ventures and Transportation Division represents construction and engineering firms as well as major financial lenders and investors. In fact, the division has within its ranks most of the organizations and individuals that have developed the major public-private venture projects that have gone forward to date.

In this regard, I should note that some of our members here today presented testimony on individual projects or on innovative

financing proposals. Therefore, I will limit my remarks to the broader questions contained in the committee's letter of invitation.

The Nation's roads and bridges need to be repaired and improved. In its 1993 biennial report on the condition of the Nation's highways, the DOT stated that an annual expenditure of $51.6 billion is required to simply maintain the 1991 condition of our roads and bridges. Unfortunately, total capital outlays for road construction and improvements reached only $36.1 billion, $15.5 billion short of the annual amount just needed to keep things the way they were two years ago.

The same report set the cost of completely eliminating the identified backlog of highway and bridge needs at $290 billion.

Based on 1989 needs information, the Competitiveness Policy Council said last year that an additional investment of $10 billion a year is needed "well into the future" to reduce the backlog of deficiencies on national highway system routes alone.

Mr. Chairman, ARTBA believes that to ensure that our Nation's roads and bridges are properly maintained so we can keep pace with the growing volume in commercial and personal traffic, an increase of the Federal motor fuels user fee—the traditional source of project financing—must be considered. However, as Members of the committee know all too well, getting a user fee through Congress is difficult. If an increase is obtained, it will likely not be sufficient to meet the backlog that has resulted from years of neglect due to inadequate funding.

Because the needs are great and unlikely to be fully met through traditional funding sources, ARTBA believes that innovative financing has a legitimate and necessary role in transportation project development.

ISTEA provided new opportunities for private sector participation with State and local governments in financing and developing needed highway, bridge and tunnel improvements. The act breaks with the past by allowing States to blend toll and traditional motor fuels user fees, providing a potentially significant source of additional financing for these much-needed projects.

The toll and private-public venture provisions of ISTEA Section 1012 also enable States and private parties to enter into cost-sharing agreements in new forms of facility ownership.

Although the toll and private-public partnership provisions of ISTEA represent a bold and forward thinking departure from the status quo, this subcommittee and other Members of the House recognized last year—and the year before—that something more was needed to get this new phase of the Nation's toll road program off the ground.

Specifically, the House twice overwhelmingly approved needed changes to the ISTEA toll and public-private venture provisions in the technical corrections bills and subsequently included them in the National Highway System Designation Act of 1994. These changes would, among other actions, more fully open the door for the financial participation of pension funds and other entities, clarify the meaning of reasonable rate of return and other key terms, and state with greater specificity the environmental and other requirements of the optional loan program.

There are other approaches that ARTBA believes merit support. For example, Federal funds should be permitted to be used as loans or matching funds for all public-private venture transportation projects that have a dedicated revenue source. Federal and State revolving loan funds should be established to underwrite the predevelopment and development phases of transportation construction projects.

Furthermore, independently operated Federal and State revolving loan funds should be considered to provide subordinated capital and other credit enhancements to facilitate the sale of revenue-generating projects senior debt in the capital markets.

ARTBA firmly believes that projects undertaken with proceeds from loans or repaid loans should be carried out under the competitive bidding process applicable to other activities involving the use of Federal financial assistance.

These provisions and related initiatives would help promote construction of public-private partnerships in transportation. However, I would point out that the changes to Section 1012 that were just described may, standing alone, not be enough to bring out the full promise of the program.

Mr. Chairman, I believe it's important to look at what ISTEA did in terms of promoting public-private ventures and toll road project development in innovative financing. In a nutshell, Section 1012 provides States either a straight match or an optional revolving fund for the construction of toll roads, bridges and tunnels.

Section 1012 also set a new course by allowing for private ownership so long as the parties agree to be bound to the Federal contracting requirements applicable to Federal-aid highway projects.

The Section 1012 toll and public-private venture program clearly signaled a marked departure from the traditional project financing of public highways. This departure, however, concomitantly required State highway departments to view project financing in a way very different from the norm whereby projects are financed by a combination of Federal grants matched by State funds.

As we now know, the Section 1012 program has not caught on as originally hoped. This is understandable given the change in perspectives that follow from the implementation of the program, particularly the financing provisions. Perhaps more important is the fact that Section 1012 provisions are not mandatory. Therefore, nothing in the section requires a State to build a transportation facility using the innovative financing provisions contained in the section. In fact, most States would have to pass enabling legislation just to allow full use of the Section 1012 provisions.

The State of Washington is one of few States that has such an enabling statute on the books. Its public-private ventures initiatives law declares that the Department of Transportation should be encouraged to take advantage of new opportunities provided by Federal legislation under Section 1012.

It further provides that the Secretary shall solicit proposals from, and negotiate and enter into agreements with, private entities to undertake as appropriate, together with the Department and other public entities, all or a portion of the study, planning, design, construction, operation and maintenance of transportation systems and facilities using in whole or in part private sources of financing.

The advances made by Washington State, several others notwithstanding, more needs to be done to build support for and promote public-private ventures as the means for making new financial resources available for highway projects. In this regard, Mr. Chairman, ARTBA commends the Federal Highway Administration for undertaking its innovative financing evaluation project, which has as its major objective the fulfillment of the ISTEA toll and public-private ventures program. The Federal Highway Administration initiative calls for the submission of proposals demonstrating, among other things, the nature of the public—of the project financing innovation, its applicability to other projects and its effectiveness in leveraging public financial resources.

In announcing the project, Federal Highway Administrator Rodney Slater stated that, and I quote, "the complexity and newness of some financing issues have challenged the States' ability to use innovative financing provisions".

Administrator Slater further added that "we believe the best approach to this challenge is to identify specific projects, develop a plan of finance, and offer these projects as examples of creative financing solutions".

Mr. Chairman, ARTBA beliefs the Federal highway initiative is definitely on the right track. ISTEA, as you know, was a major overhaul of the Nation's surface transportation program, and these changes take time to be absorbed and put into effect—particularly those that are not mandatory, as is the case of the law's toll and public-private venture provisions.

In this regard, we believe that a further incentive can be provided to the States by setting aside a separate pool of funds that can be used to provide financial support for pilot projects that demonstrate innovative highway project financing with the broad—with the potential for broad application. This pool of funds, which we believe should come from general appropriations, would provide the carrot that's currently missing from the Section 1012 program.

This pilot approach has been effectively employed in the past. In the 1987 highway reauthorization act, seven toll projects were approved to receive 35 percent Federal funding, serving as a precursor to the Section 1012 program.

The time has come to recognize that long-term investments in transportation facilities and other capital goods should be treated differently from annual expenditures for operations. A capital budget, similar to that used by many States, would enable the Federal Government to rationally plan and finance programs and projects as investments that may be carried out over a number of years and yield benefits over a long period of time.

Mr. Chairman, ARTBA commends the work that you and many of the Members of your committee have done by proposing a capital budget bill last year. There is growing appreciation for this concept, and we urge the committee to continue pursuing the goal of a capital budget.

ARTBA supports sustained and effective activities designed to improve the environment in which we live. Improved transportation facilities can contribute substantially to achieving environmental goals through such means as reducing traffic congestion in urban areas. We believe, however, that executive branch agencies—

agencies should not attempt to expand these programs beyond the boundaries established by Congress.

In 1990, Congress approved the amendments to the Clean Air Act that were fairly balanced. These amendments did not specifically apply to transportation construction projects in attainment areas—those that meet Federal air quality standards—or to those projects that are not federally funded.

The EPA subsequently published regulations on January 11, 1993, that generally followed the congressional mandate. Last spring, however, organizations representing State and local air pollution control officials asked EPA to regulate both non-Federally funded projects and those located in attainment areas.

The Public Works and Transportation Committee advised the EPA in a June 21, 1993, letter that any proposed extension of the Clean Air Act conformity program in that fashion had no support in the statute or in legislative history. Mr. Chairman, ARTBA commends you and the other Members of the Committee for your prompt action in this regard.

Unfortunately, EPA has their own thoughts on the matter, notwithstanding the fact that the Agency had already concluded in its January 11, 1993, proposed rule that the Clean Air Act conformity requirements do not extend to attainment areas and non-Federal transportation projects.

Since published reports indicated that EPA intended to expand the conformity program, ARTBA sent a letter to Administrator Browner, accompanied by an extensive legal brief, advising the Agency that any reversal of EPA's stated position is so significant that it must be the subject of either reproposal or additional public comment.

Mr. Chairman, the Committee was provided with copies of the letter and the legal brief at the time of their preparation.

In the final conformity rule published on November 24, 1993, EPA stated that it believes it has the authority to apply the conformity program to projects in attainment areas and that it will undertake an additional rulemaking to implement this aspect of the program. The final rule also requires limited project-specific determinations for certain non-Federal projects.

As a result, ARTBA filed suit in the U.S. Court of Appeals for the District of Columbia, challenging EPA's new conclusion that it has legal authority to regulate projects in attainment areas and those that are not federally funded.

Mr. Chairman, the Clean Air Act conformity program was, without doubt, highly complex, and its requirements can delay or prevent much-needed transportation projects from being carried out.

For example, if a project currently in an attainment area is treated the same as one in a nonattainment area, it cannot be built unless it is accounted for in the air quality analysis underlying the transportation improvement plan or in the State implementation plan, which is prepared by State air quality agencies after a lengthy process involving, among other steps, public hearings and legislative action.

A case in point is the San Joaquin Hills toll road project in Laguna Beach, California. Since the project began in 1991, an array of professional environmental advocacy groups filed seven legal

challenges at a cost of over $2 million in legal bills and close to $5 million in delayed construction costs. This is a large—large expense was incurred even though the environmental documents for this project had been approved by dozens of agencies and found to be legal, a conclusion supported by Federal and State courts. While ARTBA supports a strong national environmental policy, the policy must be rational and consider costs and practicality before being implemented.

We greatly appreciate the strong support of the Public Works and Transportation Committee in publicly stating in the strongest terms that EPA's effort to extend its authority is contrary to the actions and intent of the Congress. Unfortunately, there are others who endorse the EPA approach. For that reason, the Congress should formally restate its intentions that EPA does not have the authority to extend conformity to projects using non-Federal funds or those in attainment areas.

Mr. Chairman, I'd like to thank you for this opportunity to present ARTBA's position on these pressing issues. At this time, I would be glad to answer your questions.

Mr. BORSKI. Thank you, Mr. Allen.

We'll hear from Mr. Foster now.

Mr. FOSTER. Good afternoon, Mr. Chairman. I'm Richard L. Foster. I am the CEO and Chairman of the Board of PKF-Mark III, a construction firm in Newtown, Bucks County, Pennsylvania. Bucks County puts me just north of Chairman Borski's legislative district.

My company has been involved in over 120 water and wastewater projects in varying parts of the country but primarily in the eastern Pennsylvania and New Jersey areas, although we're very, very active in the Boston Harbor project at this point in time. I understand that there have been four previous hearings by this committee, and so you're evidently doing a very thorough job on this issue of innovative infrastructure financing, and we're appreciative that you want NUCA's ideas on this.

I'm going to discuss with you just briefly two techniques that we're going to offer. Some of this has been covered quite well by other speakers today, but I'll go through them as we at NUCA see them.

First of all, I want to address a State Water and Wastewater Trust Fund. State is the key word. The concept is not brand-new in that the Clean Water Council had a study in 1990 that brought up this idea. It is regarded as a complement to existing programs.

Certainly, it needs some reevaluation since 1990 because there have been changes in existing programs. There have been changes in our economy. A learning process on that would be the fact that the SRF programs that were implemented in the Clean Water Act have, by all terms, been successful to date.

Drinking water is obviously looking at having an SRF. There's some solid waste people that are looking at the same thing. They're looking at it because it has been successful in clean water.

We do have to, as I say, respond to present conditions. You've got budget constraints. But another present condition also is the legislation that was passed as ISTEA, which really can lead you into a good number of these ideas that have come up today and that

I want to discuss. A basic reason for all of this, I guess, is financing gaps, and I want to read to you what we regard as the financing gap that has to be addressed.

In 1980, the EPA evaluated and published a report that found $125 billion worth of work needed in the wastewater program. In the last 10 years, we've put in place—my industry has put in place approximately $75 billion worth of work.

There have been scores of worthwhile projects. On my home front, the Delaware River, because of work that's been done in the City of Philadelphia and the City of Morrisville, Pennsylvania, in which my company was active, and a lot of others, there have been great improvements. The purest example I can give you is perhaps that the shad now come up the river again. For a number of years they did not. They're a very astute fish, evidently, but they now come up past Lambertville and go on up into their breeding grounds.

The improvement from the Clean Water Act in the Delaware River has improved the source of drinking water. Many of the plants above Philadelphia obviously affect the water that's taken in at Torresdale, and it's easier to treat drinking water that isn't polluted when it reaches you, quite obviously.

But a further EPA study in 1992 identified $137 billion worth of needs—$125 billion in 1980, $137 billion in 1992. We are losing ground, quite obviously.

But it isn't quite that basic. There have been population increases, so you need additional facilities. There have been improved standards issued by the EPA that the various wastewater treatment plants have to meet.

The plants that I build and that my competitors build have a great deal of automated operations in them today which involves a lot of instrumentation. They make those plants as fail-safe as they can. All of that costs additional money to be installed originally. It helps with operating costs in many, many cases, but it is an additional capital expense.

Certainly you have inflation and certainly you have the expectations of the public. The public understands the Clean Water Act, and they expect it to work. The present expenditures of $6 to $8 billion a year are never going to catch up. And the public, as I said a moment ago, is aware of this. There are newspaper exposés. There are pictures.

Our NUCA group has a flow-stoppers campaign to advertise the issues that need to be taken care of in our business.

And certainly the Boston Harbor project came up in a political campaign a few years ago, and it worked because they're going to do $3.5 billion worth of work in Boston Harbor, finishing up in about the year 2000.

Only marginal gains on addressing the needs of the country for wastewater treatment are going to be addressed by the present programs which, incidentally, you folks have got to reauthorize. That was stressed earlier by Terry Agriss. That has to almost come first. A new approach is also needed. So let's discuss that a little bit.

The approach that we're offering for your consideration is an alternative trust fund approach. It will be State administered. It will

be both water and wastewater. It will be in concert with existing SRFs. There isn't any battle going on. It should work right in with it.

Congress could authorize the States to act within a certain time to take advantage of this new program. And if they didn't, then the Federal government could create the programs.

This has been done similarly in the Clean Air Act, very much along the same lines. By establishing trust funds at the State level, it would certainly remove the Federal budget constraints. You're moving it to the State, but you are moving it. It could be flexible to meet the varying needs. It's an additional tool and source to complement, as I say, the existing SRFs and other programs.

It can be wide ranging. You can have matching grants. That would be particularly true for small and disadvantaged communities. You can have means-tested subsidies without a match. You can have credit enhancements, capital to purchase the securitized portfolios. Capital could be leveraged. Nonpoint source needs could be met with this program. Funds could be used for public projects, funds could be used for private projects, and funds could be used for public-private projects.

All of this has been addressed today, and I won't try to go into the details of it. Those projects are available to us.

Once again, the public-private projects are not an unprecedented issue. You have covered that in the 1991 ISTEA legislation. So we're learning from that.

How do you capitalize these State trust funds? Two obvious ways: Water use fees, wastewater charges. There are many studies, there are many opinions, there are many guesses at how to do this.

But it boils down to this: That if you would charge 20 cents per thousand gallons of water or of wastewater or of both, it would generate about $21 to $24 billion a year, each one of those programs. I say here that's a lot of money. But, at the same time, if you're addressing the concerns that I talked about earlier, it's not a lot of money.

But you take the arithmetic and you run it down—it's 6 cents a day per household. You want to go with both fees—it's 12 cents a day per household. Double it at the 12 cents, you're talking about $50 billion over a seven-year period. Not a bad start.

In conclusion on the State trust, we think that, based on a modest increase in household costs, it will produce significant funding to address the water and wastewater needs.

There's some legislation before your full committee, H.R. 4475, to study these issues. This legislation was offered by Congressman Franks from New Jersey. We think it warrants attention.

On the privatization issue, this is a, I think, somewhat of a hot topic today. Many levels of government are looking at it to help resolve their problems, especially budget problems and especially the larger cities. As you well know, Mr. Chairman, Philadelphia is doing some privatization efforts today.

It is not brand-new, privatization. It goes back even into the 19th Century with toll roads and ferry boats to get across the rivers. They were privatized. In 1970 there was some attention to it in the water and wastewater systems.

In 1980 there was some pro-market influence of the new administration. In April 1992, the President ordered EPA to issue policy guidance on privatization, including existing facilities. More recently, in January 1994, there was an Executive Order to seek private sector partnerships in infrastructure. So the idea is out there. There are all manner of privatization arrangements.

The three basic types that apply in my industry are design and construct, operate and maintain and then full ownership, but usually with a time period when the project is going to be turned over to the owner, which would be the city or town or authority. There are as many variations of this as you could dream up, and it is a question of the parties that are involved sitting down and negotiating the terms of the arrangement.

As an example of a design and construct project, there was a Washington, D.C. area developer in the Maryland countryside with a desirable location to develop. There was a strong need to replace an outdated and way too small facility in the community.

A NUCA contractor from Syracuse, New York, M.A. Bongiovanni, came down and worked with that developer in that town and built the project. By his terms, it was a regular project, built the way you normally do. The only difference that he identified was that the monthly check came from the developer instead of from the community.

The mutual advantages were quicker development for the man that wanted to build the apartments and a state-of-the-art quality plant for the owner at approximately 20 percent of the cost.

On an O&M-type operation, there is great competition in that business in our country today. The advantages of having an O&M firm run your treatment plant is price because of the competition. They operate many other plants so you get some economy of scale.

They have innovative methods because they are in a profit-making business and they want to use the latest methods and they have the advantage of bulk purchases, chemicals, things like that. My company was involved in a combination of these two efforts that I just mentioned. We took on a job at Howell Township of New Jersey that came about because the State had mandated the use of reservoir water in lieu of below groundwater in what was called the Manasquan Basin. Townships were given a choice of buying treated water or untreated water. They were also given a fairly tight time constraint when they had to do that and the arrangement was they were going to pay for the water whether they took it or not. So the township of Howell had to act fairly quickly.

They issued RFPs, RFQs, took proposals. My firm was selected and we did do the design, built it and for three years operated the plant which was the description in our contract. It was an $11.8 million project for us and we feel that we built that plant 25 percent cheaper for that town than it would have been if I had gone conventional full design, bidding.

We put it in full operation on July 1, 1990, and ran it for three years and have turned it over to the town and they are running it with one of those competition businesses that I mentioned earlier. It is an outside firm running the plant. It happens to be the same one that we selected for our company as well. That was mutually advantageous for that town and for us. It was low cost, fast

track project. We had some innovative systems in there, fully automated. It was manned only during the day, an 8-hour shift, and it ran 24 hours a day and there was an alarm system that went to the local police station. In three years it went off twice and it was taken care of right away. For my side of it, it was a very, very nice project for my company and it was good publicity for us and a good marketing tool. We have a brochure that we pass around to show everybody what we did over there.

The third type of privatization, I will just touch on it briefly to give you how we feel about it, is private ownership. You can have private ownership in new facilities. You can sell an existing facility which has been popular in certain areas because you have a one-time windfall for the owner, get the operating costs out of budget, the township can start collecting taxes on the property, you have efficient operation, you meet all the EPA standards and you have efficiency of scale.

The needs for private ownership, and this has been covered very well by other speakers, is some modification of some of the Tax Code issues, some of which were changed by the Tax Act of 1986.

In conclusion, NUCA was asked to testify today in order to get our ideas on infrastructure funding and we thank you for that opportunity. I was asked to represent NUCA as a spokesman for the utility contractors, a down-in-the-ditches representative, if you will. You did want me to discuss the conditions of funding methods. Many others did that today and they were very good at it.

As utility contractors, we see and feel the real effect of varying funding levels, the number of employees we can use, the full-time use of our equipment rather than having it sitting in the yard rusting, the whole level of our business activity is a function of funding that comes from all sources.

Today, we have suggested that you look at the funding sources and put in place whatever legislation is required. We don't think any one new funding program will necessarily fill the entire bill. We think any new funding should complement and work in conjunction with the present Clean Water Act and the Safe Drinking Water Act, which we assume you are going to reauthorize.

NUCA and its individual contractor members are ready to offer our help to you on a continuing basis. We will do what is needed to establish the new financing methods and we will help you sell those ideas to the public. Thank you.

Mr. BORSKI. Thank you very much.

Mr. Ziccardi.

Mr. ZICCARDI. Thank you, Mr. Chairman. I am Tony Ziccardi and I have been in the home building business for 22 years. I am pleased to be here today to present the views of the 170,000 members of the National Association of Home Builders on alternative infrastructure financing.

Throughout my career, I have been actively involved in my State association as well as in NAHB and am past President of the New Jersey Builders Association and the Builders League of South Jersey. I have chaired the NAHB Infrastructure Task Force and Land Development Committees and currently serve on the executive committee and as co-chair of the Environmental Task Force.

It is important to remember today that as the Federal Government has reduced its expenditures on infrastructure, the responsibility has fallen squarely on the shoulders of States and municipalities. Although the focus of the hearing is not on who should pay the infrastructure bill, but on how to foster infrastructure investment, a point should be made here.

The lack of infrastructure investment and the assumption of that responsibility by the State and local governments is often manifested by shifting part of the burden to builders in the form of development exactions or impact fees. Unlike costs of on-site improvements for which builders routinely pay and which directly benefit the residents of new developments, impact fees are upfront charges levied against new development to fund off-site capital improvements that may serve residents other than the new development.

These fees represent the single most important source of escalating housing costs and range anywhere from an average of $700 in 1991 to $26,000 in homes built in Escondido, California. If the cost of public infrastructure facilities is continued to be borne by the development community, the result is increased cost of development, increased cost of housing, increased rents for tenants in both residential and commercial buildings, and increased overhead costs for industries.

In the aggregate, these increased costs could prevent the development from proceeding altogether because small developers are not able to front the necessary costs to install new public facilities. The impact of the credit crunch of the 1980s has only exacerbated the problem of obtaining acquisition and development financing. Often loans necessary for site development for municipal infrastructure cannot be financed and this places an unnecessary burden on the land development process.

Consequently, small to medium-sized builders lack the necessary funds to provide the required infrastructure. As an example, currently I am working on the acquisition of a piece of land in southern New Jersey which is approved for 160 single family housing units and 190 town houses of which 30 of these 190 town houses are low and moderate units.

The off-site costs to develop this community which include funding the major entrance facility to service the development, the improvements to the county roads, the extension of the water and sewer main, force main, pumping station, et cetera, are well over three-quarters of a million dollars.

In most instances today, most small to medium-sized builders cannot afford these up-front costs in their entirety, and cannot finance them, so alternative means of providing the necessary off-site improvements must be secured. The impact fees, on the other hand, have had adverse side effects as they relate to financing infrastructure.

The developer's up-front financing of the infrastructure through impact fees is more costly than the bond-financed public improvement. In fact, the pressure is mounting throughout the country for States to enact laws to empower municipalities to impose impact fees. These have fallen solely on the shoulders of the select few who buy the new houses or rent the new office buildings when, in fact, the older residents of the communities gain the benefits of the new

sources of infrastructure, which would probably have to have been borne by some other source if not through the impact fee process itself.

The payment of principal and interest up front on these fees and the charges is reflected in higher home prices and rental rates rather than in increased Government collection of taxes and user fees.

Obviously, the most common means of financing infrastructure has been and will continue to be to issue bonds and service the debt out of the general or dedicated revenue. There are primarily two types of bond issues utilized by States and municipalities to finance this. General obligation bonds, which are backed by the full faith and credit of the issuing jurisdiction and are paid out by the general revenues. Most States restrict the amount of bonded indebtedness that local jurisdictions can take on and require local governments to obtain voter approval for bonds issues.

Voters often are reluctant to approve general obligation bond because they fear that their property tax rates will be increased and somewhere down the road somebody has to service that debt. As a result, revenue bonds are increasingly utilized by State and local governments. Revenue bonds are backed only by specific revenue streams such as user fees, special assessments and tax increments.

Today's hearing is very timely. Even as we speak Congress is exploring one means of creating a secondary market for business, commercial, multifamily and community development loans. The Senate passed as part of its Community Development Banking legislation, H.R. 3474, a proposal which would facilitate a secondary market for small business and commercial loans.

In conference, the House Banking Conferees are contemplating expanding the Senate provision to create a secondary market for multifamily and infrastructure bonds and loans or "community development" loans as described in H.R. 2600 sponsored by Representative Paul Kanjorski. These various alternative bills have one common denominator in that they would facilitate the creation of a secondary market by applying the Secondary Mortgage Market Enhancement Act or SMMEA to various types of loans or debts. Congress passed SMMEA in 1984 and since that time most observers agree, securitization of residential mortgages has increased the amount of capital available for home mortgages, assuring a continuous supply of capital and simultaneously bringing down its cost.

Generally the securitization process combines traditional bank lending and the sale of securities to public investors. After loans are made by a bank or other lending institutions they are pooled with other loans and "sold" to a financing vehicle, often a trust, that in turn sells debt securities to private investors. The securities are collateralized by a pool of loans and the interest and principal on the loans is passed through the financing vehicle to investors.

The funds generated by the sale of loans serve as a new source of capital to the banks to make additional loans. However, Federal securities, banking, tax and other laws currently pose substantial impediments to securitization of infrastructure financing.

The Secondary Mortgage Market Enhancement Act removed these impediments for residential mortgages. Expanding those same benefits that SMMEA brought to residential loans, to infra-

structure loans and bonds would help create a secondary market and free up significant amounts of money for new financing of infrastructure.

Municipal bonds are a prime candidate for securitization because they are typically insured and/or backed by a municipality's full faith and credit or by a guaranteed income stream. Securitization of State and local bonds would in all likelihood reduce the interest rate cost to these issuers by broadening the market for these securities. These funds could create pools of their bonds to broaden their market, thus reducing the risk and enhancing the cash flow.

The reduction in bond issuer borrowing costs resulting from securitization of bonds is not known. However, some estimates of interest rate reduction resulting from this are available. Feldstein estimates that the creation of the Government-sponsored enterprise or a GSE for infrastructure financing would result in reductions of 40 to 70 basis points in borrower costs.

Infrastructure loans to builders fund both on- and off-site infrastructure facilities such as water and sewer hookups, ancillary roads, et cetera. This type of community development is essential to the home-building process and more readily accessible financing for these projects would benefit the community, housing consumers and the home building industry. The creation of a secondary market for infrastructure loans would make it less expensive and easier to finance public infrastructure, helping to alleviate the need for impact fees to finance these infrastructure needs.

A second means of creating a secondary market would be to establish a government-sponsored enterprise. While I recognize that these are not the most popular methods in Congress today, the NAHB infrastructure task force proposed, and did a rather comprehensive study several years ago, on the creation of a new government-sponsored enterprise called the National Infrastructure Bank or Infra Mae.

The creation of a new GSE would require an act of Congress and there is currently no legislation pending in either chamber, but a GSE would have much the same benefits as SMMEA in that it would provide long-term financing for infrastructure projects at significantly below-market rates of interest. Infra Mae could also provide credit enhancement for tax-exempt infrastructure bonds and also provide more direct support to that part of the market, where tax-exempt funding is currently not available.

Because of the favorable interest rates on tax-exempt financing, such financing will be preferred for infrastructure projects if it is available. This would limit Infra Mae's likely market share and would significantly affect its size. While Infra Mae would likely be a significant financial institution, it would not grow to the size of Fannie Mae or Freddie Mac, each of which supports hundreds of billions of dollars in loans.

Infra Mae would serve as a secondary market institution, supporting and strengthening the primary lenders. It would compliment, rather than substitute, for private lending already taking place. Whether it provides credit enhancement or a secondary market institution, Infra Mae would need to set strict underwriting and servicing requirements. Along with private financial institutions, State infrastructure banks might be among the primary lend-

ers benefiting from Infra Mae's credit enhancement and loan advances.

The third means of creating a secondary market is to establish State infrastructure banks. State infrastructure banks can assume several forms. The most commonly used banks are bond banks, State revolving funds and sub–State pools. Acting like a secondary market, pooling allows municipalities with high credit ratings to benefit from lower issuance costs and assists many unrated or low rated communities to tap financial markets and obtain low-interest loans.

A sub-State pool is similar to a bond bank in that it represents pooling of the needs of those municipalities and, in fact, operates like a bond bank. One of the primary differences is that while a State bond bank operates for the benefits of all municipalities in the State, a sub–State pool is established for the benefit of a designated group of municipalities which have agreed to form the pool.

The third form of infrastructure bank is the revolving loan fund. It is usually capitalized with Federal and State grants and therefore has a permanent source of lending capital. Mr. Rohatyn, this morning, referred back to the requirement of the 2-cent-a-gallon tax. This could work for the revolving loan fund type of bond banking.

One drawback to the bond banks is the relatively expensive environmental facilities that have been financed through them. Also the Tax Reform Act of 1986 imposed a lot of structural limitations that cloud prospects for creating bond banks in States that had not yet established them. The Government Finance Research Center reports that existing State bonds banks plan to continue operation. However, the economic inducements for other States to create such institutions are marginal enough to make the effort unattractive. Thus, enactment of legislation providing relief from some of the 1986 restrictions on tax-exempt funding would be an important complement to the bond bank model.

In conclusion, Mr. Chairman, while the creation of a government-sponsored enterprise is the preferred approach to creating a secondary market, the National Association of Home Builders realizes that Congress is reluctant to adopt such legislation, although we would fully support it if you so choose. For this reason, NAHB supports the application of SMMEA to infrastructure bonds and loans as the best alternative. Conferring SMMEA benefits to infrastructure finance will not guarantee the creation of a secondary market, but simply stated, will remove many of the obstacles towards creating one.

NAHB urges the subcommittee to relay its support for legislation applying SMMEA to infrastructure loans and bonds to the relevant committees of jurisdiction. Thank you.

Mr. BORSKI. I want to thank you very much for your patience among other things. You have each made valuable suggestions that deserve careful consideration and this committee will give it such. Let me thank you once again for your input today and the subcommittee hearing is now adjourned.

[Whereupon, at 2:35 p.m., the subcommittee was adjourned.]

CIFA

COUNCIL OF INFRASTRUCTURE FINANCING AUTHORITIES

President
Terry Agriss
New York

Vice President
Paul Marchetti
Pennsylvania

Secretary
Shockley D. Gardner, Jr.
Virginia

Treasurer
Patricia A. Comp
South Carolina

Executive Director
James N. Smith

Suite 200
1625 K Street NW
Washington, DC 20006

Tel: (202) 857-0686
Fax: (202) 857-0688

Testimony of
The Council of Infrastructure Financing Authorities
Before the
House Subcommittee on Investigation & Oversight
Hearing on Infrastructure Financing
July 13, 1994

Mr. Chairman and members of the Committee, I am **Terry Agriss, President of New York State's Environmental Facilities Corporation.** I am pleased to appear before you today to testify both in that capacity and as President of the **Council of Infrastructure Financing Authorities (CIFA).** CIFA is a national organization of State and local authorities whose missions are finance to public infrastructure facilities. Most of our State members manage at least the financial component of the State Revolving Loan Funds (SRFs) for wastewater treatment, and as such, are vitally involved in the current and future success of the SRF program. Consequently, I am pleased to respond to your request to testify today on the State Revolving Loans Funds and the role they currently play and might play in the future, in providing innovative financing for our nation's infrastructure.

An Innovation in Financing

The SRF program is a public finance success story. In spite of the lip service paid to the concept of innovative financing mechanisms for infrastructure, the SRF is the single innovation to emerge in the area of federal capital financing. Its application to financing our nation's wastewater treatment needs is a uniquely innovative process that has leveraged limited dollars into a substantial loan pool with the capacity to fund billions of dollars of projects well into the 21st Century. From our experience with this financing innovation, we believe it has application to other areas of public financing, including drinking water facilities, solid waste and some transportation facilities.

The revolving loan fund, as it has been adapted to meeting wastewater needs, is especially well suited to providing federal financing assistance in a time of relative fiscal austerity. The concept and the application of the SRF is simple. Basically, the federal government contribution is seed money and the states match it. In turn, these funds can then be "leveraged" through the sale of tax-exempt bonds to the private capital market making a lending pool which, if properly managed, can provide a source of low cost capital for project financing in perpetuity.

Since 1989 the federal and state contribution to the New York State Revolving Fund has totaled $800 million which together with proceeds from investment earnings and leveraged bonds, has generated more than $2 billion dollars for 148 loans for water pollution control projects. The on-going repayment of these loans over their twenty year lives will continue to free up

the Fund's capital which can be used again and again to finance yet more infrastructure at below market rates.

Nationwide, the picture is equally impressive. These figures are not exact, but reasonably close to convey an accurate picture of how well the SRF is working to provide low cost financing for clean water. With SRF's now operating in every state and Puerto Rico, approximately $8 billion of federal capital grants have been awarded. These federal dollars have been matched with over $2 billion of state funds and nearly $4 billion in leveraged dollars for a total of around $14 billion for lending to over 2,000 municipal treatment projects. Moreover, the repayment stream on loans outstanding is expected to exceed one-half billion dollars this year -- money that can again be relent, at preferred rates, for new capital projects.

Can this meet our present and future needs for wastewater treatment now estimated to exceed $130 billion? With limited additional federal and state contributions and careful management on the part of the States, the answer is yes. For example, if the SRF were funded at $2 billion a year for 12 years with the existing 20 percent state match and a leverage factor of 2:1 for 60 percent of the Funds, a loan pool would be created capable of financing $133 billion in projects over the next 25 years. A table attached to my testimony graphically displaying this assumption, shows that with federal contribution ending in 2005, the self perpetuating nature of the SRF would generate enough revenue from loan repayments to provide over $115 billion in project financing from 2005 to 2020. Where else can you get that kind of return on the federal investment while at the same time accomplishing a critical public purpose at below market prices?

Advantages of Loan Financing

From the state and national perspective, there is a definite advantage to loans over project grants. While we appreciate that some municipalities would prefer grant assistance over a subsidized loan, there are sound reasons, in terms of economy of national expenditure and efficiency of project financing, for Congress to maintain the SRF funding approach and resist entreaties to return to the grant approach for federal support. Most important:

Loans Provide Assistance to More Projects: The combination of the state match and the additional funds that can be made available by leveraging, creates a loan pool capable of financing a much larger share of project needs than would a grant program at a federal share of 55% or higher.

For example, comparing the scenario I described earlier which would create a loan pool of $133 billion from a federal capital contribution of an additional $24 billion, the same federal dollars directed to grants would finance only $44 billion in wastewater projects -- less than one third the amount that could be funded by the SRF.

Loans Limit Future Federal Exposure to Funding: The permanent funding base provided by the SRF eventually diminishes the demand for future federal contribution. Loan programs begin revolving money for new projects almost immediately and can

reduce the structural deficit by at least $2 billion annually when the SRF is fully capitalized.

Loans Are More Efficient: Experience with the SRF, thus far, has demonstrated their efficiency as compared to grants. Greater local responsibility under a loan program results in lower project costs, encouraging communities to build to meet their actual needs rather than building to meet grant eligibility. For example, in 1989, the Town of West Monroe in central New York State built a low pressure sewer system and treatment facility using $650,000 in SRF loan proceeds and a $45,000 state grant. By contrast, a few years earlier, the same town, anticipating a Title II federal grant, planned a facility to achieve the same environmental purpose which would have cost $1,250,000. The record is replete with such examples.

Loans, which are more efficient to manage from a federal and state perspective, significantly reduce the manpower requirements for federal supervision that was associated with grants administration. Since 1987, total staffing in EPA's Wastewater and Enforcement Compliance program has been reduced by more than 100 FTEs, reflecting in part the shift from grants to loan management. Reductions in the federal workforce are not an insignificant consideration given present budget constraints.

Loan Funded Projects Are Built Faster: Because SRFs can fund the total cost of most projects, they remove the need for communities to raise the additional financing necessary to cover their matching share of the grant plus the non-grant eligible components of the project. Moreover, with full availability of financing, projects are being completed up to 50% faster than under the grant program. There is no waiting on grant priority lists or for EPA grant reviews. There is an old adage in the construction business that "time is money," and expedited project construction leads to substantial savings.

Also, loan financed construction occurs more quickly because the loan program does not penalize communities that start their projects in advance of a loan. Since the SRFs allow loan refinancings, municipalities are encouraged to begin the design and construction phase when they are ready. Costs of planning and design can be refinanced under the SRF program, so the borrower does not risk forfeiting future financial assistance by beginning the process early. Since many SRF's have adopted a policy of immediate loan availability, there is no need for a borrower to arrange any separate interim financing for the project, avoiding additional financing costs. States with large needs have been able to leverage their available loan funds and are operating under a policy that any project can be financed when it is ready. Leveraging can double or triple available assistance under the loan program. Unfortunately, if the Clean Water Act fails to pass this year, we will face for the first time a real shortage in the capitalization of SRFs. This will mean in New York, even with a 3:1 leveraging ratio, that we will have to deny assistance to many communities.

Applications for SRF Funding

The application of the SRF to meet other infrastructure financing needs has real potential. CIFA has recommended the creation of an SRF loan fund for financing solid waste facilities, and has been actively involved in advancing President Clinton's proposal to extend the SRF financing mechanism to meet safe drinking water facility needs. This proposal, embodied in legislation that has passed the Senate and is under consideration in the House, will go a long ways in addressing needs for expanded and improved drinking water treatment. We urge your support of this legislation as it comes before the House of Representatives.

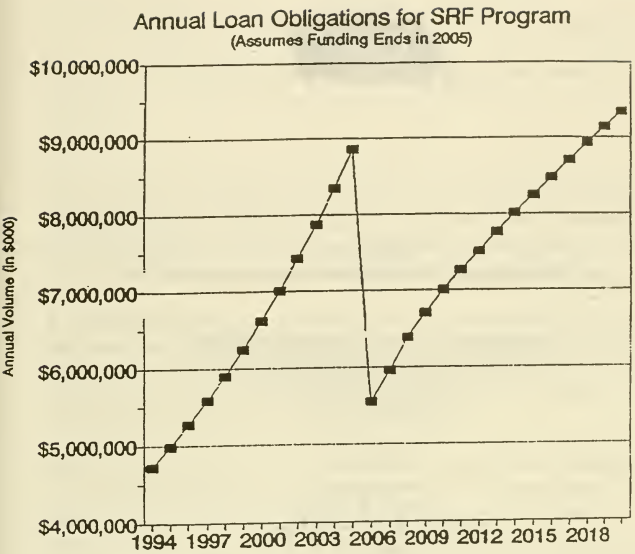
Additional areas of application for the SRF mechanism can be found in provisions included in the 1991 ISTEA legislation allowing states the option of using a share of their federal transportation grant funds for transportation loans. This has some limitations in the transportation area, since many such projects are now grant funded. Nevertheless, the SRF concept could be efficiently applied to construction of toll or fee supported facilities -- especially roads, bridges and mass transit.

While some states have passed the necessary legislation enabling them to participate in this program, to my knowledge no projects have yet used this financing option -- perhaps for reasons that are endemic to the area of transportation financing or possibly because of limitations in the present statutory authority. Our experience with the wastewater SRF and the transition from grant funding to loans, might be instructive in why this initiative has been slow to materialize. CIFA members would be pleased to work with DOT and our counterparts in the state transportation agencies to familiarize them with the SRF lending arrangements and assist in its implementation.

Other potential applications of the SRF for public facility financing can be found in a 1992 report prepared for the National Institute for Justice identifying the revolving loan fund as an efficient model for funding correctional and other criminal justice facilities. Also, the possibility of applying the SRF structure to financing local health care facilities, may also hold promise.

Finally, as a state administrator of the Revolving Loan Fund for wastewater, I would be remiss if I did not remind the Committee that the future continuity of federal participation in the SRF rests squarely with the House Public Works Committee where reauthorization of the Clean Water Act and the SRF provisions are pending. Authorization for SRF financing under Title VI is exhausted, and as you are aware, Mr. Chairman, the Appropriating Committee has indicated that future appropriation will not be available without new legislative authority. We urge the Committee to move forward with reauthorization of the Clean Water Act in this Congress. The failure to provide new authority and additional funding will seriously cripple the future capability of the SRF to meet water financing needs.

I thank you for this opportunity to testify and will be pleased to answer any questions you or colleagues might have.



1) Annual federal appropriation of $2 billion, ending in 2005
2) Only states that are currently leveraging or expected to leverage soon are included in the leveraging program
3) Sixty percent of the program will be leveraged at two times the capitalization amount
4) Forty percent of the program will be direct loans at two percent interest rates
5) All loan programs are assumed to have a 1% return on equity
6) Includes recycling of SRF funds from 1990-93 capitalization appropriations

Prepared by the N.Y. State Environmental Facilities Corporation

ARTBA

Statement of

American Road & Transportation Builders Association

To

Subcommittee on Investigations and Oversight
Committee on Public Works & Transportation
U.S. House of Representatives
Washington, D.C.

July 13, 1994

Presented by
William H. Allen
Principal, Dewberry & Davis
Fairfax, V.A.

1010 Massachusetts Ave., N.W., Washington, D.C. 20001

Testimony
The American Road & Transportation Builders Association
Before
House Subcommittee on Investigations and Oversight

Mr. Chairman, Mr. Inhofe and members of the subcommittee, my name is William H. Allen. I am a principal in the engineering firm of Dewberry & Davis and a past president of the American Road & Transportation Builders Association's Public-Private Ventures in Transportation Division.

It is a distinct honor for me to appear before you today and share the views of the American Road & Transportation Builders Association on infrastructure financing. I would like to take this opportunity to commend the committee for holding a hearing on this matter and for framing the issues that it would like addressed in such a clear and insightful manner.

By way of introduction, the American Road & Transportation Builders Association (ARTBA) was founded in 1902 and is the only national association which represents firms and individuals engaged in the planning,design, construction, financing, and operation of all types of transportation facilities. ARTBA's Public-Private Ventures in Transportation Division represents construction and engineering firms as well as major financial lenders and investors. In fact, the Division has within its ranks most of the organizations and individuals that have developed the major public-private venture projects that have gone forward to date.

In this regard, I should note that some of our members will be presenting testimony today on individual projects or on innovative financing proposals. Therefore, I will limit my remarks today to the broader questions contained in the committee's letter of invitation.

Mr. Chairman, the nation's roads and bridges need to be repaired and improved. In its 1993 biennial report on the condition of the nation's highways, the Department of Transportation stated that an annual expenditure of $51.6 billion is required to simply maintain the 1991 condition of our roads and bridges. Unfortunately, total capital outlays for road construction and improvements reached only $ 36.1 billion--$ 15.5 billion short of the annual amount needed just to keep things as they were two years ago.

The same report set the cost of completely eliminating identified backlog of highway and bridge needs at $290 billion.

Based on 1989 needs information, the Competitiveness Policy Council said last year that an additional investment of $10 billion a year is needed "well into the future" to reduce the backlog of deficiencies on National Highway System routes alone.

Mr. Chairman, ARTBA believes that to ensure our nation's roads and bridges are properly maintained so we can keep pace with the growing volume in commercial and personal traffic, an increase of the federal motor fuels user fee --the traditional source of project financing--must be considered. However, as members of this committee know all too well, getting a user fee through Congress is difficult; if an increase is obtained, it will likely not be sufficient to meet the backlog that has resulted from years of neglect due to inadequate funding.

Because the needs are great and unlikely to be fully met through traditional funding sources, ARTBA believes that "innovative" financing has a legitimate and necessary role in transportation project development.

• Jump Starting Section 1012 Toll and Public-Private Venture Program

ISTEA provided new opportunities for private sector participation with state and local governments in financing and developing needed highway, bridge, and tunnel improvements. The Act breaks with the past by allowing states to blend toll and traditional motor fuels user fees providing a potentially significant source of additional financing for these much-needed projects. The

toll and public-private venture provisions of ISTEA Section 1012 also enable states and private parties to enter into cost-sharing agreements and new forms of facility ownership.

Although the toll and public-private partnership provisions of ISTEA represent a bold and forward thinking departure from the status quo, this subcommittee and other members of the House recognized last year--and the year before--that something more was needed to get this new phase of the nation's toll road program off the ground.

Specifically, the House twice overwhelmingly approved needed changes to the ISTEA toll and public-private venture provisions in the technical corrections bills and subsequently included them in the National Highway System Designation Act of 1994 (H.R. 4385). These changes would, among other actions, more fully open the door for the financial participation of pension funds and other entities, clarify the meaning of "reasonable rate of return" and other key terms, and state with greater specificity the environmental and other requirements of the optional loan program.

There are other approaches that ARTBA believes merit support. For example, federal funds should be permitted to be used as loans or matching funds for all public-private venture transportation projects that have a dedicated revenue source. Federal/state revolving loan funds should be established to underwrite the pre-development and development phases of transportation construction projects.

Furthermore, independently operated federal and state revolving loan funds should be considered to provide subordinated capital and other credit enhancements to facilitate the sale of revenue-generating projects' senior debt in the capital markets.

ARTBA firmly believes that projects undertaken with proceeds from loans or repaid loans should be carried out under the competitive bidding process applicable to other activities involving the use of federal financial assistance.

These provisions and related initiatives would help promote public-private partnerships in transportation construction.

However, I would point out that the changes to Section 1012 that were just described may--standing alone--not be enough to bring out the full promise of this program.

Mr. Chairman, I believe it is important to look at what ISTEA did in terms of promoting public-private ventures in toll road project development and innovative financing. In a nutshell, Section 1012 provides states either a straight match (i.e. up to an 80 percent federal grant for tunnels) or an optional revolving fund for the development and construction of toll roads, bridges, and tunnels. Section 1012 also set a new course by allowing for private ownership so long as the parties agree to be bound to the federal contracting requirements applicable to federal-aid highway projects.

The Section 1012 toll and public-private venture program clearly signaled a marked departure from the traditional (i.e. grant) project financing of federal highways. This departure, however, concomitantly required state highway departments to view project financing in a way very different from the norm whereby projects are financed by a combination of federal grants matched by state funds.

As we now know, the Section 1012 program has not caught on as originally hoped. This is understandable given the change in perspectives that follow from the implementation of the program, particularly the financing provisions. Perhaps more important is the fact that Section 1012 provisions are not mandatory. Therefore, nothing in the Section requires a state to build a transportation facility using the innovative financing provisions contained in the section. In fact, in most instances, a state would have to pass enabling legislation to allow for the full use of the Section 1012 provisions.

The state of Washington is one of the few states that has such an enabling statute on the books. Its public-private ventures initiatives law declares that "the department of transportation should be encouraged to take advantage of new opportunities provided by federal legislation under Section 1012..." It further provides that the "secretary...shall solicit proposals from,

and negotiate and enter into agreements with, private entities to undertake as appropriate, together with the department and other public entities, all or a portion of the study, planning, design, construction, operation, and maintenance of transportation systems and facilities using in whole or in part private sources of financing."

- FHWA's Innovative Financing-- Test and Evaluation Project

The advances made by Washington state and several others notwithstanding, more needs to be done to build support for and promote public-private ventures as the means for making new financial resources available for highway projects. In this regard, Mr. Chairman, ARTBA commends the Federal Highway Administration for undertaking its innovative financing evaluation project, which has as its major objective the fulfillment of the ISTEA toll and public-private ventures program. The FHWA initiative calls for the submission of proposals demonstrating, among other things, the nature of the project financing innovation, its applicability to other projects, and its effectiveness in leveraging public financial resources.

In announcing the project, FHWA Administrator Rodney Slater stated that "the complexity and newness of some financing issues have challenged the [states'] ability to use the innovative financing provisions..." Administrator Slater further added that "we believe the best approach to this challenge is to identify specific projects, develop a plan of finance, and offer those projects as examples of creative financing solutions."

Mr. Chairman, ARTBA believes the FHWA initiative is definitely on the right track. ISTEA, as you and members of this committee know, was a major overhaul of the nation's surface transportation program and these changes take time to be absorbed and put into effect--particularly those that are not mandatory, as in the case of the law's toll and public-private venture provisions.

In this regard, we believe that a further incentive can be provided to the states by setting aside a separate pool of funds that can be used to provide financial support for pilot projects that demonstrate innovative highway

project financing with the potential for broad application. This pool of funds, which we believe should come from general appropriations, would provide the "carrot" that is currently missing from the Section 1012 program.

This pilot approach has been effectively employed in the past. In the 1987 highway reauthorization act, seven toll projects were approved to receive 35 percent federal funding serving as the precursor of the Section 1012 program.

•Enact a separate capital budget for the federal government.

The time has come to recognize that long-term investments in transportation facilities and other capital goods should be treated differently from annual expenditures for operations. A capital budget, similar to that use by many states, would enable the federal government to rationally plan and finance programs and projects as investments that may be carried out over a number of years and yield benefits over a long period of time.

Mr. Chairman, ARTBA commends the work that you and many members of this subcommittee have done by proposing a capital budget bill last year. There is growing appreciation for this concept, and we urge the committee to continue pursuing the goal of a capital budget.

- The Costs of Misguided Environmental Regulation.

ARTBA supports sustained and effective activities designed to improve the environment in which we live. Improved transportation facilities can contribute substantially to achieving environmental goals through means such as reducing traffic congestion in urban areas. We believe, however, that executive branch agencies should not attempt to expand these programs beyond the boundaries established by Congress.

In 1990, Congress approved amendments to the Clean Air Act that were fairly balanced. These amendments did not specifically apply to transportation construction projects in attainment areas--those that meet federal air quality standards--or to those projects that are not federally funded.

The EPA subsequently published regulations on January 11, 1993 that generally followed the congressional mandate. Last spring, however, organizations representing state and local air pollution control officials asked EPA to regulate both non-federally funded projects and those located in attainment areas.

The Public Works and Transportation Committee advised the EPA in a June 21, 1993 letter that any proposed extension of the Clean Air Act conformity program in that fashion had no support in the statute or legislative history.

Mr. Chairman, ARTBA commends you and other members of the Committee for your prompt action in this regard.

Unfortunately, EPA had its own thoughts on the matter, notwithstanding the fact that the agency had already concluded in its January 11, 1993, proposed rule that the Clean Air Act conformity requirements do not extend to attainment areas and non-federal transportation projects.

Since published reports indicated that EPA intended to expand the conformity program, ARTBA sent a letter to Administrator Browner accompanied by an extensive legal brief advising the agency that "any reversal of EPA's stated position is so significant that it must be the subject of either reproposal or additional public comment."

Mr. Chairman, the committee was provided with copies of the letter and legal brief at the time of their preparation.

In the final conformity rule published on November 24, 1993, EPA stated that it believes it has the authority to apply the conformity program to projects in attainment areas, and that it will undertake an additional rulemaking to implement this aspect of the program. The final rule also requires limited project-specific determinations for certain non-federal projects.

As a result, ARTBA filed suit in the U.S. Court of Appeals for the District of Columbia challenging EPA's new conclusion that it has legal

authority to regulate projects in attainment areas and those that are not federally funded.

Mr. Chairman, the Clean Air Act conformity program is without doubt highly complex, and its requirements can delay or prevent much-needed transportation projects from being carried out.

For example, if a project currently in an attainment area is treated the same as one in a non-attainment area, it cannot be built unless it is accounted for in the air quality analysis underlying the transportation improvement plan (TIP) conformity or in the state implementation plan (SIP), which is prepared by state air quality agencies after a lengthy process involving, among other steps, public hearings and legislative action.

A case in point is the San Joaquin Hills toll road project in Laguna Beach, California. Since the project began in 1991, an array of professional environmental advocacy groups filed seven legal challenges at a cost of over $2 million in legal bills and close to $5 million in delayed construction costs. This large expense was incurred even though the environmental documents for the project had been approved by dozens of agencies and found to be legal, a conclusion supported by federal and state courts. While ARTBA supports a strong national environmental policy, the policy must be rational and consider costs and practicality before being implemented.

We greatly appreciate the strong support of the Public Works and Transportation Committee in publicly stating in the strongest terms that EPA's efforts to extend its authority is contrary to the actions and intent of Congress. Unfortunately, there are others who endorse the EPA approach. For that reason, the *Congress should formally restate its intentions that EPA does not have the authority to extend conformity to projects using non-federal funds or those in attainment areas.*

Mr. Chairman and members of the committee, I would like to thank you for the opportunity to present ARTBA's position on these pressing issues. At this time, I will be glad to answer any questions that you may have.

National League of Cities

1301 Pennsylvania Avenue N.W.
Washington, D.C.
20004
(202) 626-3000
Fax (202) 626-3043

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TESTIMONY OF

JOSEPH BENDEL

COUNCILMEMBER, MCKEESPORT, PENNSYLVANIA

REPRESENTING THE NATIONAL LEAGUE OF CITIES

BEFORE THE

HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

July 13, 1994

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Recycled Paper

Good morning, my name is Joseph Bendel. I am a council member of McKeesport, Pennsylvania and President of the Pennsylvania League of Cities. I am testifying today on behalf of the National League of Cities, representing some 150,000 municipal elected officials from about 16,000 cities across the country, directly and through membership in state municipal leagues.

These cities range in size from New York City and Los Angeles to Sun Valley, Idaho with a population slightly more than 500. Consequently, we represent the oldest and broadest spectrum of citizens of any public interest organization.

IMPORTANCE OF INFRASTRUCTURE

We appreciate the opportunity to testify before you on the need to rebuild our public infrastructure. Our highways and bridges, water and sewer facilities, port and transit facilities can truly be said to represent the vital underpinnings of our economic and governmental system. Without their certain and efficient operation, the life and commerce of our nation could not exist.

While the recognition of the dismal state of our public infrastructure is not new, these hearings are nonetheless timely. That the nation's economic strength depends to a great extent on the quality of that infrastructure is an issue that cannot be disputed.

Earlier this year, our members and Board of Directors selected investment in public infrastructure as one of NLC's top five Action Agenda issues for 1994.

In our fiscal survey released at the National Press Club this Monday, we reported that infrastructure needs were the second most adverse factor affecting local budgets and economies this past year, just behind the rising costs of health care benefits and ranked even with the costs of complying with unfunded federal and state mandates. In fact, Mr. Chairman, our survey reported that for small cities, the single most unfavorable factor causing fiscal problems came from infrastructure and capital needs--much more than crime, health care, or mandates. I have brought copies of the report for the committee to assist you in your leadership on this issue.

There can be no question that public capital investment is the cornerstone of local economies and will be critical to the competitiveness of our national economy.

DETERIORATING INFRASTRUCTURE

In the wake of a continuing decrease and underfunding of infrastructure investment, innovative and alternative infrastructure financing techniques are the route that cities must take. In recent years, financial responsibility for infrastructure has increasingly become the burden of the nation's cities. Local governments now provide more than half of the more than $100 billion spent each year to build, maintain, and operate our systems of public

works---up 38 percent from 20 years ago. The budgetary pressures faced by federal and state governments mean this financial burden will continue for the foreseeable future.

Currently there are billions of dollars in needed public works projects waiting for attention around the country--attention that federal funding has not been able to give. These local conditions have only been exacerbated by the depleted local treasuries that are unable meet infrastructure needs. This burden has encouraged cities to find new ways to finance public works services required by their residents and local businesses.

As responsibility increasingly falls to the local governments, cities as different as Indianapolis and Escondido, California have developed innovative, alternative infrastructure financing techniques suited to meet their individual infrastructure needs.

OVERVIEW OF PROJECTS

ESCONDIDO, CALIFORNIA:

When the City of Escondido needed a water and wastewater treatment plant but lacked the means to build it, it turned to a unique financing program. Forced by state and local voter-imposed constraints to use more innovative financing, the city sold access rights to 50 percent of the proposed facilities without additional funding from a public bond issue. Since the advance sales of access rights to only half of the capacity funded construction of the total, revenues from the sale of the remaining capacity are an uncommitted reserve, which, it is estimated, will be sufficient to fund all future improvements to the water and wastewater

systems with recourse to debt or special assessments.

Not only was a total of $26 million raised for the project, but the city estimates that it has gained about $1 million in added income through the repurchase and resale of access rights. It is also estimated that future connection fees, which are not required to pay off debt on the current capacity, will generate another $100 million over the next 20 years--funds that can be used to meet upcoming infrastructure needs.

INDIANAPOLIS:

In response to an array of infrastructure needs and a shortfall of financing means, Indianapolis created the tax free Neighborhood Savings Bonds Program. With maturity values of $5,000 and multiples of that amount, they pay interest at maturity (1996-2018) and are sold to investors at a discount because they are accrued and compounded semi-annually at fixed rates.

The $20 million dollars worth of bonds were secured by payments from 5 taxing districts in the city to fund infrastructure in flood control, redevelopment, thoroughfare, parks and sanitary. They will finance 477 projects in these areas as part of a three year $530 million city infrastructure improvement plan.

FEDERAL GOVERNMENT'S ROLE

Federal capital investment is lower than in any competitor nation of the industrialized world. The proportion of the federal budget going to capital investment continues to decrease. It is clear that over the longer term, the federal government must come to terms with entitlement spending in order to halt the erosion of capital investment. The continued disinvestment has clearly affected local governments--especially smaller cities. Reversing the trend is one of the highest priorities of our organization.

While local governments create innovative and alternative infrastructure plans amidst this era of reduced federal assistance, the disparities in tax bases and the pressure from crime, unfunded mandates, and health care make clear that the federal government can play a powerful positive or negative role in helping cities to make necessary investments in infrastructure. The federal surface transportation act (ISTEA) is an example of a positive partnership; recent changes in the federal tax code, proposals to change the Airport and Airway Improvement Act, the House passage of telecommunications infrastructure legislation, and proposals by the federal Securities and Exchange Commission (SEC) are all examples of federal actions which can interfere with innovative local infrastructure. We would look forward to working with the committee to address all these issues in a constructive manner.

ISTEA

The Intermodal Surface Transportation Efficiency Act of 1991 was one of a few bright lights for cities. The $151 billion in federal transportation funding will go a long way in helping

cities move foreword in infrastructure development and economic viability.

It is under the ISTEA that the state of Washington has created unique public-private legislation that is the first attempt to blend federal, state and private funds and credit. Also, the Federal Highway Administration is hoping for a budget office approval to allow the use of $10 billion in unobligated highway trust fund balances for "phantom" federal equity to be used as credit support or guarantees for revenue bonds. Meanwhile, the Texas Turnpike Authority is negotiating to be the first to establish a revolving loan fund using ISTEA's innovative finance provisions.

Capital Finance

As existing legislation like the ISTEA gives local governments a much needed boost in infrastructure financing, proposed legislation like Rep. Coyne's Public Finance and Infrastructure Act of 1993 (H.R. 3630) will continue to build upon the city programs. Designed to make projects like Indianapolis' Neighborhood Savings Bond program easier for cities to establish, H.R. 3630 proposes to change the internal revenue code to increase the usefulness of tax exempt bonds in meeting state and local government capital financing needs. The legislation will streamline the definition of tax exempt private activity bonds, simplify the existing arbitrage of rebate requirements, increase small issues exemption for banks deduction of interest and establish a new type of tax exempt private activity bond.

But most helpful for local governments is 3630's provision that will create the Community

Economic Development Bond--an aid targeted at economically hard hit communities. These bonds should provide communities of all sizes with the necessary means to foster economic growth and create new jobs. These bonds would help hard hit communities during a time when local governments find themselves without sufficient resources to make important long-term investments.

We are delighted at the majority support for the legislation on the Ways and Means Committee and strongly urge co-sponsorship from your committee.

The 1986 Tax Reform Act radically altered our access to the municipal market, making municipal issuers far more reliant upon purchases of municipal securities by money market funds. Individual investors now hold 75 percent of municipal bonds. Therefore, proposed changes that affect that market could impact both the costs of providing public services and facilities for municipal constituents as well as force higher taxes and user fees on our citizens to finance the cost of complying with such changes.

We note that the current municipal market is critical to capital financing for every city and town in the nation. It is a market far larger than the private securities markets in terms of number of issues; yet our safety record in terms of defaults is far superior. Any comparison of defaults or chapter 9 versus chapter 11 filings, including for non-rated issues, demonstrates the efficiency and integrity of this market versus any other. We are concerned that efforts to devise and impose new requirements are raising doubts in the minds of investors about already outstanding bond issues of smaller municipalities and less frequent

issuers

Airport Infrastructure

We are apprehensive that efforts by the airline industry could set adverse precedents for all public infrastructure. The Senate has passed and sent to conference with the House legislation to reauthorize airports and airways legislation, S. 1491. That version includes a key, unprecedented provision permitting the federal government to levy up to $50,000 a day in civil penalties on cities and towns. Current remedies for failure to comply with grant conditions permit cutting off all grant funding or prohibiting a city from applying for new grants: the Senate proposal could set a precedent for any and all federal grant programs to cities.

We strongly urge you to reject the Senate civil penalty language. Airports are critical to competitive local economies. Federal intervention, and federal civil penalties can only provide a disservice to growth and opportunity.

Telecommunications

Our nation is on the verge of an infrastructure revolution--the investment of more than $300 billion in the construction of an information superhighway. This new system will reshape the nation's cities and will affect nearly fifteen percent of our national economy, or one out of every six jobs, by the year 2000.

As passed by the House, however, this huge infrastructure undertaking largely preempts local governments.

The House overwhelmingly passed the Energy and Commerce Committee telecommunications infrastructure legislation, H.R. 3636, preempting local authority and potentially costing cities millions of dollars in revenues. The bill sponsored by Rep. Ed Markey (D-MA), Chairman of the Telecommunications and Finance subcommittee, and Rep. Jack Fields (R-TX), would allow local telephone companies and cable television companies to enter each others' business.

H.R. 3636 includes no role for local governments. It preempts state and local authority. The bill would provide no authority for cities and towns to have franchise agreements in order for phone companies to provide cable services.

While we have hopes and will make every effort to ensure that the Senate is more responsive to providing for a public role in the construction of this new highway system, we note that the House bill would deplete scarce local capital investment resources and remove cities from any role in how and where the construction occurs. We would hope this committee would consider playing an active role in seeking a stronger outcome in any conference with the Senate later this year.

SEC

Finally, I want to urge the committee to consider the potential impact of proposed rules and regulations by the Securities and Exchange Commission. The SEC has proposed a system of current and continued disclosure by cities and towns about our bonds used to finance nearly 80 percent of the country's public infrastructure. The rules have been issued to protect private investors.

But filing all these reports will cost money. It will cost local governments money--which will have to be paid either by reduced spending for public infrastructure or by higher taxes and fees. As we near November, I know that each member of this committee is all too aware of how difficult it is to raise taxes.

The SEC is charged by Congress to regulate the securities industry to protect investors. It has no charge, and has taken no effort, to consider the impact of its proposed rules on taxpayers and public units of government. Because the rules are complex, few in the Congress have thought about them. But just as states and local governments last year remitted $300 million to the Internal Revenue Service in arbitrage payments, the SEC's proposed rules will similarly divert scarce public resources away from innovative public capital investment.

We believe it would be helpful for the subcommittee to request the SEC to delay any final promulgation until it has completed a cost-benefit analysis and provided the subcommittee with an evaluation of the potential impact on public infrastructure financing. The SEC has been unable to provide any examples of general obligation or municipal revenue bonds where

city elected officials deliberately misled investors; the SEC claims it needs the new rules not to prevent current abuses, but to protect against possible future abuses.

Quite honestly, Mr. Chairman, we are more concerned about abuses against public infrastructure investment now.

To close, Mr. Chairman, our fiscal survey demonstrates that city fiscal conditions are improving. It shows that cities are managing and balancing their budgets in tough times. It demonstrates we are innovative in finding ways to meet public needs, even with the strong pressure from health care, crime, and unfunded mandates.

But I think our report shows equally clearly that financing public infrastructure requires a partnership with the federal government, where the federal government enhances, rather than obstructs our ability to make needed investments. We are grateful for your interest, look forward to your report and recommendations, and stand ready to respond to any questions you might have.

Thank you.

TESTIMONY OF
MICHAEL B. COOK
DIRECTOR
OFFICE OF WASTEWATER MANAGEMENT
OFFICE OF WATER
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
OF THE
COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
U.S. HOUSE OF REPRESENTATIVES

July 13, 1994

Good morning Mr. Chairman and Members of the Subcommittee. I am pleased to be here today representing the Environmental Protection Agency (EPA) in the continuation of our dialogue on the Nation's environmental infrastructure. We strongly support exploration of alternative and creative financing options which may help us better meet the significant needs we have in both wastewater and drinking water infrastructure.

Wastewater and drinking water infrastructure remain essential services which must be provided at the local level. Federal and State governments play important roles by setting minimum national standards and supporting the financing of needed infrastructure improvements.

INTRODUCTION: WASTEWATER AND DRINKING WATER INVESTMENTS, NEEDS, AND SOLUTIONS

Over the last century, the Nation has invested heavily in building a comprehensive wastewater treatment and drinking water network, for which the federal government alone has provided almost $70 billion of assistance. And yet, as

you are well aware, many of our communities are facing very large needs in both of these areas. Many facilities are approaching the end of their useful lives. Our underground infrastructure -- sewer systems -- is in serious need of attention. Combined sewer overflows (CSOs) continue to impact many of our most valuable water resources, including the Chesapeake Bay, Long Island Sound, and many areas in the Great Lakes. Urban stormwater discharges are, in fact, the second most significant source of pollution of our Nation's lakes and estuaries and the third most significant source to our rivers. Breaches of sewer integrity, known as sanitary sewer overflows (SSOs), can be caused by a wide variety of problems with sewage collection systems including: aging/deteriorating infrastructure, design limitations, maintenance problems, increases in service population, and acts of nature. Such breaches of sewer integrity can result in significant ground water and surface water contamination.

Our investments in secondary treatment have resulted in very real, even dramatic, water quality improvements, but municipal wastewater remains a significant source of pollution of many of our Nation's waters. In fact, of the waters that were assessed (1992 National Water Quality Inventory), municipal sources are still responsible for 15% of the impairments to our rivers, 21% to our lakes, and 53% to our estuaries.

While our drinking water network provides the highest quality water in the world, many areas of the country, particularly those in rural and disadvantaged areas, do not receive drinking water at acceptable levels of quality. Further, advances in

science have revealed many chemicals which need to be addressed even at seemingly low concentrations. Finally, the drinking water infrastructure needs to be maintained and replaced. Older systems, particularly those in the East Coast, have deteriorating distribution systems. Some systems still have portions of their distribution system made from wood dating back to the early 1800's.

In order to meet both the environmental and financial needs we face, the Administration has sought legislation to create a new Drinking Water State Revolving Fund (DW-SRF) which will substantially increase the amount of federal funds supporting the continued improvement of our drinking water infrastructure in order to help cover the costs of compliance with drinking water treatment standards. Further, the Administration has committed to continued capitalization of the Clean Water State Revolving Fund (CW-SRF) through the year 2004. This level of capitalization would allow the State CW-SRFs to issue loans for wastewater and other environmental infrastructure worth about $2 billion annually.

Today I want to address three very important topics related to the financing of wastewater and drinking water infrastructure. First, investment in drinking water and wastewater infrastructure, while substantial, has not kept pace with needs. Second, private investment offers a viable potential source of capital which may help us close the gap between current levels of investment and needs. The Agency has sponsored and participated in a number of demonstration projects to facilitate private investment. I would like to share our initial impressions of the projects which seem to offer the most potential. Finally, there are a number of legislative, regulatory, and practical

barriers to private investment in wastewater and drinking water infrastructure which need to be considered and appropriately addressed.

CURRENT INFRASTRUCTURE INVESTMENT AND NEEDS

Last May, Assistant Administrator Bob Perciasepe discussed with you the status of the Nation's needs and current levels of investment in wastewater and drinking water. Let me set the stage here by reiterating a few of those points.

Wastewater

According to 1992 Census data, the current level of capital investment in wastewater infrastructure from all members of the infrastructure partnership is roughly $10.0 billion annually. We were able to break this figure down using data from the 1990 report, "Environmental Investments: The Cost of a Clean Environment." As you might expect -- the largest share, some 56%, came from our local partners. States provided approximately 7%. EPA provided another 26%, and other federal sources -- including the Rural Development Administration, HUD's Community Development Block Grant program, and others -- provided approximately 11%.

EPA publishes a Clean Water Act (CWA) Needs Survey every two years to document traditional wastewater needs as well non-traditional needs, such as CSOs, stormwater, and nonpoint sources -- all of which are eligible for funding under the CW-SRF system. Our latest survey estimates total needs at just over $137 billion,

including needs of $31 billion for secondary treatment projects, $15 billion for advanced treatment, and $41 billion for CSOs.

The Needs Survey documents the cost of wastewater and related projects for those communities with needs today, but does not estimate all future needs. We believe that in order to meet all current and future needs, all members of the partnership should be investing approximately $13 billion annually.

The current and projected $10 billion annual investment in wastewater infrastructure from all members of the partnership will meet most, but not all, of the annual needs for construction.

Drinking Water

In general, the information available on drinking water is not as well documented as it is on the wastewater side. We estimate that the State and local share of the total capital investment in drinking water infrastructure, including proposed DW-SRF funds, is approximately 67%. Federal sources, primarily the Rural Development Administration and HUD's Community Development Block Grant program, provide approximately 27%. If the DW-SRF program were authorized, EPA's share would be approximately 6%. Our information on drinking water needs is also very limited. EPA is currently setting up a needs survey similar to the one conducted for wastewater to better estimate these needs.

EPA'S ALTERNATIVE FINANCING EFFORTS

EPA's public/private partnership effort or Environmental Finance Program (EFP) began several years ago under the leadership of the Office of Administration and Resources Management and with the participation and support of all of EPA's program offices, including the Office of Water. The EFP seeks through financial outreach to improve environmental compliance by finding ways to lower costs, increase public and private investments, and build State and local capacity to manage environmental programs and systems. Since its inception, the EFP has: sponsored 47 demonstration projects to identify the most promising financing concepts for improving environmental compliance; worked with EPA's State Capacity Task Force to develop a catalog of alternative financing mechanisms; and, assumed the management and operation of the Environmental Finance Information Network (EFIN). EFIN contains a bulletin board, abstract service, and a hot line. The Agency is planning to expand EFIN this year to include technical assistance features like rate setting models and an environmental services vendor directory.

Perhaps the most significant of the EFP's efforts is the recent establishment of an Environmental Finance Center Network at five major universities across the country, including the University of New Mexico, University of Maryland, Syracuse University, California State University at Hayward, and, opening this fall, a center at Cleveland State University. These Centers seek to train State, local, and other officials on environmental finance principles, techniques, and issues. These Centers

are intended to serve as a kind of environmental financing "extension service" and will become independent of EPA in a few years.

EPA has sponsored 47 demonstration projects to test and demonstrate the viability of various alternative financing approaches. These demonstration projects have covered a wide variety of efforts, including the regionalization of drinking water systems (and their financing) through cooperatives and bond pools, a rural public-private partnership to recycle used motor oil, a public-private, State-wide recycling hot line, and an analysis and comparison of the financing options available to a small community for wastewater treatment alternatives.

Let me highlight a few successful examples from these many projects.

- The bond pool for small water utilities in Maine was established last year with the cooperation of public and private groups. Its formation will allow the utilities to borrow money for member system needs at low interest rates through tax-exempt bond pool financing. We are excited about the possibility of replicating this success in other States.

- The innovative recycling hotline located in Arizona is funded by the private sector, already saving State taxpayers more than one million dollars. The "800" number serves Arizona, Colorado, Texas, Nevada, Hawaii, Illinois, and California, and provides callers with information on household hazardous wastes and pollution prevention, where to purchase recycled goods, and how to maximize recycling of products. The hot line is being introduced in other western States, and a proposal has been developed for implementing it nationwide.

- The used motor oil recycling program in Colorado has diverted over 100,000 gallons of oil from improper disposal in its first three years. In addition, private participation in this program has significantly lowered the costs to the small, rural communities involved.

- And, lastly, a simple, financial analysis approach was developed to price-out wastewater treatment alternatives for a small New Mexico community. The financial information revealed that the community needed to make organizational decisions regarding annexation, incorporation, or regionalization

before proceeding. It is currently considering those decisions. The financial analysis approach developed has already been picked up and used by a small community in Colorado.

Our task now is to evaluate the results of all these demonstration projects and begin disseminating information on the most viable options.

EPA also has a senior advisory board, known as the Environmental Financial Advisory Board (EFAB) which provides leadership and expertise to the Agency in environmental financing matters. This group was chartered in 1989 and has prepared a series of important reports to the Administrator of EPA on environmental financing alternatives and proposals for a national environmental financing strategy.

Executive Order 12893, "Principles for Federal Infrastructure Investments" (January 26, 1994) seeks to improve the understanding and consideration of costs and benefits of all our infrastructure investments. In both the wastewater and drinking water areas, EPA plans to examine these issues at a national level and will submit a preliminary report with our 1996 Budget submission to the President. Further, the Executive Order also instructs EPA and other federal agencies to seek greater private sector participation in infrastructure investment and management. We intend to vigorously pursue this initiative. The Administration is also committed to applying market-based incentives to the CWA program, such as point/nonpoint trading.

POTENTIAL FOR PRIVATE CAPITAL INVESTMENT

Private capital is an under-utilized source of financing, particularly in the wastewater area. With leadership and incentives from the federal government, a significant investment of private capital could help close the infrastructure financing gaps we face.

The substantial level of federal funding for wastewater need not inhibit private investment. In the 1991 Intermodal Surface Transportation Efficiency Act, private participation is strongly encouraged and encouraged to work in concert with high levels of federal funding.

We know that private participation in wastewater infrastructure can be successful, although we have limited examples. Prior to 1986, when the tax laws changed, there were several examples of private capital investment in wastewater facilities which yielded significant cost savings to the communities while delivering the needed infrastructure improvements. Auburn, Alabama and Chandler, Arizona contracted with private firms to design, build, operate, and own several sewage treatment plants. These arrangements resulted in significant savings of both time and money for these communities. Other cities have had success with innovative public/private management partnerships, some of which did not include private ownership.

PROMISING IDEAS TO PROMOTE PRIVATE INVESTMENT AND EFFECTIVE PUBLIC-PRIVATE PARTNERSHIPS

We are really at the beginning of a long process to develop creative and alternative ways of financing environmental infrastructure. From the demonstration projects I mentioned earlier and our ongoing work in this area, we have come to learn that public/private partnerships are a very promising alternative to traditional environmental infrastructure management. Further, mechanisms such as bond banks or credit pools can offer much needed help to rural and disadvantaged communities which face many difficulties financing and managing necessary environmental infrastructure. Let me now take a few minutes to discuss some of these ideas in a little more detail.

1. Expanding the use and the potential benefits of public/private partnerships for environmental protection is a key goal for EPA. These partnerships show great promise, particularly for the financing, construction, and operation of infrastructure facilities. We believe that local officials are in the best position to develop capital financing structures that help them to meet their drinking water supply and wastewater treatment responsibilities. We find that communities throughout the Nation are taking the lead in "reinventing government" and acknowledging the ability of private capital to enhance public investment. The EPA is committed to supporting these communities and allowing them flexibility in financing the infrastructure systems needed to achieve the environmental protection our citizens demand.

In 1992, EPA identified three wastewater systems as pilot projects for our public/private partnership initiative and our implementation of Executive Order 12803: the City of Indianapolis, the City of Silverton, Oregon, and the Miami Conservancy District near Dayton, Ohio. We are working with local officials and private companies to assess and develop effective models for greater private sector investment and management of wastewater facilities and to identify the barriers that exist as these and other communities strive to combine the resources of the public and private sectors to achieve clean water. These are complex and exciting projects that will provide valuable information to the Agency that we will share with our local partners throughout the country.

Indianapolis conducted a comprehensive study of the operations and financial management of its wastewater system to identify and analyze issues associated with the possible transfer of the facilities to the private sector. After reviewing results of the study, the city decided to request proposals for private management of its wastewater treatment plants. Indianapolis selected a private firm in November 1993 to manage the facilities under a five-year contract. While the city remains interested in the possibility of selling the treatment plants, it determined that doing so would not be in its best interest at this time.

The Miami Conservancy District has been diligently working with the cities it serves and with the current private operator of its wastewater treatment plant to negotiate the sale of the plant to the company. The District, like Indianapolis, is

experiencing problems with federal environmental and tax policy matters, but believes it still may be able to complete the transaction over the next few months.

Silverton wishes to attract a private equity investor in its wastewater system. The city intends to maintain a 51 percent majority interest in its facilities and invest the equity infusion in capital improvements. The community has crafted a creative proposal that provides for economic development, wetlands mitigation, and wetlands treatment of wastewater flows. We look forward to helping Silverton achieve the financial and environmental successes it seeks through this innovative project.

2. Attracting private participation is highly dependent on full-cost pricing which assures the appropriate return on investment. Sound financial management practices are essential to accurately price and provide environmental services. Increasing the financial self-sufficiency of environmental services and controlling project cost are two other areas where creative approaches can yield significant results. The Environmental Finance Centers I mentioned earlier will provide information and assistance on full-cost pricing, improved capital budgeting, prioritizing, and other techniques.

3. Improving access to credit markets can be accomplished through a number of means, including bond banks and credit pooling. Bond banks or credit pools act as intermediaries for communities that would otherwise be unable to enter the bond markets at affordable rates. Rural and disadvantaged communities may not have the

institutional capabilities to secure financing in the bond markets or from other credit sources. Several States, including Maine, have instituted bond banks to provide needed institutional capability. By securing financing for many small or disadvantaged communities, costs and expenses are greatly reduced through economies of scale.

The Border Environment Cooperation Commission (BECC) and the North American Development Bank (NADBank) were established in one of the side accords to the North American Free Trade Agreement (NAFTA). The BECC is a bi-national organization set up with a broad charter to assist federal, State, and local governments and private interests to develop environmental infrastructure within the border region. The NADBank, working with the BECC, will use its resources dedicated to environmental infrastructure projects to help finance environmental infrastructure improvements on both sides of the border. BECC and the NADBank will consider a broad range of creative solutions to the environmental problems plaguing the border area, including private participation, innovative assistance to disadvantaged communities, and consolidation and regionalization in both drinking water and wastewater to increase access to credit markets and bring down capital costs.

4. Finally, training and information exchange remain powerful tools to attract private capital and participation in wastewater and drinking water infrastructure. As I mentioned earlier, the Environmental Finance Centers will provide a significant training capacity for training State and local officials. Further, the EFP is about to begin the process of reviewing the results of the 47 demonstration projects and will be

marketing the most successful results to communities across the country. The EFP will continue to provide targeted demonstration grants to test promising ideas.

BARRIERS TO INCREASED PRIVATE INVESTMENT IN WATER INFRASTRUCTURE

While other environmental statutes provide more flexibility for private participation in infrastructure financing, the CWA contains one significant barrier in the phrase "Publicly-Owned Treatment Works (POTW)." As "publicly owned" is not defined further in the law, EPA has interpreted this phrase to literally mean wholly-owned by public entities. This creates difficulties for cities that wish to join with private partners to more effectively finance and manage their municipal wastewater systems. Such systems technically may not be POTWs subject to secondary treatment effluent limits; however, they clearly are not industrial dischargers either. It is uncertain what regulatory provisions apply to a municipal sewage facility that is a public-private partnership. This phrase has effectively eliminated the possibility of private equity investment or ownership interest in municipal treatment works. The Administration, in *President Clinton's Clean Water Initiative*, has recommended that this barrier be lifted by defining POTWs to include all wastewater facilities that serve the general public. This would apply only in the regulatory context: Titles I, III, IV, and V of the CWA.

EPA also is reviewing its construction grants regulations with the objective of minimizing impediments that prevent private capital investment in wastewater

systems that received federal grant funding. The grants were awarded during a time when few municipalities were looking for private partners to invest in their facilities. Now that grant funds are no longer available, grant requirements, conditions, and regulations that assumed perpetual public ownership and operation of wastewater plants may hinder new, innovative sources of funding.

Changes to the Federal Tax Code in 1986 restricted many of the incentives and mechanisms for private sector investment in environmental infrastructure, including wastewater, drinking water, and others where public purpose and private partnership mix. Even if other legal and regulatory constrains did not exist, the private investor would still have to anticipate the likely return on an investment before risking capital.

Obtaining an attractive rate of return is difficult when the enterprise is a wastewater or drinking water facility. The initial capital investment is large, the projects are often difficult to put together, and the return on that investment tends to be realized in low amounts stretching over long periods of times. For this reason, financial incentives are required if private investors are to have an interest in these kinds of facilities. Prior to the Tax Reform Act of 1986, the federal tax laws provided a number of subsidies that provided incentives to facilitate private investment in wastewater and drinking water facilities. These subsidies included accelerated depreciation deductions and investment tax credits to investors in these types of facilities. In addition, the tax laws contained more favorable rules permitting private involvement in facilities financed with tax-exempt bonds. Although these tax law provisions provided valuable subsidies, we understand that the applicability of these

subsidies was reduced or eliminated in response to legitimate policy concerns regarding the cost and efficiency of these rules.

Another point worth considering is the quasi-governmental roles often associated with municipal sewage and drinking water authorities. Functions from setting rates and developing plumbing and/or health standards to setting effluent limits for industrial dischargers are governmental functions frequently carried out by water and wastewater authorities. In the privatization of wastewater and drinking water facilities, these issues will need to be carefully addressed so that governmental authorities continue to implement these types of functions.

Lastly, it is important to remember that State and local laws may also impose barriers to private participation in wastewater or other environmental infrastructure projects. Leadership within the Administration and Congress to remove federal barriers would send a strong signal to the States and localities to reexamine their laws and revise them accordingly.

CONCLUSION

In order to meet the dual challenges of sustaining our national wastewater network and improving that network to ensure the protection of our ecological resources, the Clinton Administration has proposed continued capitalization of the CW-SRF program through 2004. Capitalization under this plan would allow the State CW-SRFs to finance environmental infrastructure worth about $2 billion annually for the foreseeable future.

Similarly, the Administration's commitment to capitalize the new DW-SRF program will greatly increase annual federal support for drinking water infrastructure needed to comply with the Safe Drinking Water Act (SDWA). Under the Administration's proposal, DW-SRF funding would initiate at $600 million in 1994, and increase to $700 million in 1995, and be authorized at $1.0 billion annually in 1996 through 1998. We believe that these programs can and should be used in conjunction with increased private investment to meet the challenge of our vast environmental infrastructure needs.

I want to thank the Subcommittee for this opportunity to testify on our wastewater and drinking water infrastructure. We have a vested interest in maintaining our existing infrastructure to both protect the important and valuable water quality gains we have achieved over the last twenty years and to maintain the high level of protection provided by our drinking water systems. We also must continue to improve these systems to fully protect our fragile water resources and to extend a high level of protection to all of our citizens.

Also, we have an unusual opportunity before us, with the reauthorization of both the SDWA and the CWA, to improve and strengthen the infrastructure partnership for drinking water and wastewater. The leadership of Congress and the Administration in changing the framework for private participation in environmental infrastructure could be a significant step toward closing the financing gaps we face in wastewater and drinking water.

Thank you again and I look forward to your questions.

TESTIMONY SUBMITTED BY

DANIEL V. FLANAGAN, JR.

CHAIRMAN

INFRASTRUCTURE INVESTMENT COMMISSION

BEFORE THE

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

JULY 13, 1994

Mr. Chairman, Members of the Committee, it is an honor to have been invited to testify before you today as the Chairman of the Infrastructure Investment Commission created by Congress in the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991, and also as the Construction Writers Association of America's 1993 Construction Man of the Year for the "Innovative recommendations of the Commission." I am delighted to be here noting your interests in this subject matter. During the course of our hearings in 1992, your Committee was kind enough to host a luncheon for Commission members and the Committee's membership - some dozen Members of the Committee attended and the roundtable discussion that ensued was very worthwhile.

I note that you have held four earlier hearings and have covered many of the issues that our Commission had looked at as well, particularly the matters surrounding the decline in infrastructure spending in this country.

Our Commission held seven public hearings in the Fall of 1992 with 46 witnesses from various financial institutions, developers, pension funds, project sponsors, and public officials. Our report was submitted to the President and Congress on February 23, 1993, in this room as a matter of fact. We have briefed the leadership of Congress and the Chairmen and Ranking Members of the appropriate committees. We are excited that our recommendations will be considered in-depth during the course of the reauthorization of the ISTEA legislation during the years 1995 and 1996.

It is my pleasure to inform the Members of this Committee that on numerous occasions, perhaps 30 or more, I have been asked to give speeches around the country on the subject and the reception has been very positive. I think there is an intense desire to provide for new opportunities for infrastructure investment.

By way of perspective, I think it is worth noting that the major federal infrastructure initiatives that began in the post cold war era have now reached a point, 40 years later, where there is a certain maturity. Recently, I had the pleasure of listening to a talk by Secretary of Transportation Pena about the 40 year old vacuum tubes which are the principle element of our air control system around the country and his suggestions having to do with the Air Services Corporation. Coincidentally, that is the time when the Federal Highway System, under President Eisenhower, was initiated as were many other of our Federal infrastructure activities. During that same period of time, most of the infrastructure funding in this nation was devoted to either grant programs, at both the federal and state levels, as you well know, or in the municipal bond area.

Interestingly enough during the course of these speeches, it was pointed out to me by a World Bank panelist that not only was the United States the <u>only</u> nation in the world to provide for a municipal bond/tax exempt approach, with a federal tax subsidy, for our infrastructure, but that the rest of the world was geared toward a project finance approach and we were not. Through this historical devotion to grant programs and municipal bond finance which moves

exclusively through the political process - we have inadvertently prevented the private sector from playing a role. What is that role? I would tell you it is taking risk, it is introducing new technology, and it is providing alternative innovative financing.

The idea is to grow the pie. This is not an either/or but rather an additional outlet on the financing artery of infrastructure. One of the reasons that American pension funds can invest in products overseas in China and elsewhere is that there is a tradition of project finance. What we need in this country today, is that same product. Because of our historical approach (we provided a tax exempt status for pension funds coincidentally beginning after World War II and now have this tremendous build-up of capital, probably the largest capital base in the world) we have never taken the time to design an infrastructure product for this vast resource of capital - it looks for its investment opportunities elsewhere.

I must tell you Mr. Chairman, the American institutional investors want to invest in their own nation's infrastructure; but they cannot because we have not given them the product. That is my underlying message here today. There should be no mandates, we said that in our report. Frankly, the whole subject of economically targeting investing, ETI as it's called, is counter-productive. The issue is not on the pension fund side it is on the product side. What is needed in terms of the federal and local governments is the recognition that credit enhancement, development risk insurance gets product to the marketplace. The financial institutions will do their own due diligence and will make the

investments accordingly.

I welcome this opportunity to appear before your Committee and to answer the specific questions contained in my letter of invitation.

Question 1: What innovative or alternative financing techniques does the Infrastructure Investment Commission recommend for infrastructure projects?

Our recommendations for packaging a product for institutional investors are as follows:

1) The federal government would provide several tools to state revolving funds and those would be development risk (pre-construction) insurance, which is essentially coverage for architectural fees, environment studies, permits etc., against the various risks inherent in the political process. We do provide political risk insurance for American investment abroad through the Overseas Private Investment Corporation but there is no such entity today on the American scene. If we are increasingly shifting to revenue-supported projects utilizing a user fee, there must be a public confidence factor and plebiscite involved. Therefore, a premium/deductible purchase of development risk insurance allows for the entry of a "community of interest" around a project, to stay the course and establish the user fee base.

2) With the user fee established through a plebiscite or some other public action, you then have the opportunity to provide the second tool i.e., to reinsure that user fees provide the credit rating/credit enhancement for the project. This is all done as part of the pre-construction financing stage which is the most crucial part of infrastructure. Once the project is up and running and generating revenue, the unique phenomena of infrastructure is that in the downstream years, the project only enhances its economic value.

These tools will secure the interest, that has become increasingly evident by pension fund managers, to seek additional diversification in their investment strategies, and to look at interesting innovative projects across the spectrum of the American economy for possible investment. This has never happened before. Through accidents of history we have shaped our infrastructure spending around grant programs and we are unique in the world in providing significant federal subsidies to underwrite in the municipal market. We need to add a third leg which is private capital investment looking at the basic parameters of domestic project finance now done all over the world.

3) The other recommendation to help in the pre-construction finance phase is to multiply the provisions in ISTEA having to do with subordinated debt as that may be necessary to complete the financing of a project noting that the user fee will be in place eventually.

Question 2: Can these innovative financing techniques be further developed and successfully applied given the existing statutory framework?

All of this requires a small agency to serve as the administrator of this program providing these tools to state revolving funds and hence, the creation of the National Infrastructure Corporation is suggested. This would be a modest sized entity serving as the financing intermediary with the states and ultimately taking the program to its next step, which is to sponsor, with the states, a securitization of these projects and a resultant secondary market for liquidity purposes to increase the opportunity for institutional investment.

The testimony that the Commission heard from pension managers is that they seek diversification in their portfolios, and that they are prepared to do their own due diligence based on risk reward ratios; but right now there is no product available. The challenge of the federal government is to provide those tools which would be at relatively modest cost in this era of the "hard freeze." We would anticipate that the private sector would be co-investors in these insurance-type activities. We modeled our recommendation as to credit enhancement after the federal sponsorship of Connie Lee which specializes in small college facility financings. Indeed, they have leveraged $18 million of a Department of Education investment along with other private investment into $5 billion worth of current projects on their books.

We say in our report that $1 billion/year for five years would allow leverage (at the ratios of 10 - 1 and eventually 18 - 1) to the point where the Corporation

could maintain an infrastructure pipeline of economic activity of approximately $100 billion. Indeed, this is a laudable objective and the cost to Treasury would be modest.

Question 3: How would a proposed national infrastructure corporation and an infrastructure insurance company work and how can they be implemented?

The Commission has proposed offering three types of credit assistance for projects: (1) being a lender of subordinated debt to project sponsors; (2) establishing a credit enhancer to provide financial guarantees to third-party lenders; (3) providing insurance against non-completion for development phase expenses. These functions would be provided through a newly-created federally-charted organization which we are calling the National Infrastructure Corporation (NIC). For purposes of analysis, let's assume a Treasury line of credit of $1 billion to support NIC's loans, guarantees and insurance, although this is somewhat conjectural.

Each of NIC's activities would require initial capitalization from the general federal budget but is expected to be self-sustaining thereafter. We are assuming $1 billion per year over three years. The Commission somewhat arbitrarily assumed that the split among the three programs would be 65% - 25% - 10%, respectively. The budget impact analysis should calculate the fiscal impact for each dollar that is appropriated to each program, allowing us to adjust the relative allocation of funds.

1) **Funding Subordinate Project Loans:** NIC would fund $650 million of subordinate debt at an assumed blended taxable and tax-exempt rate of ten percent with $650 million of appropriations. Subordinated debt may be supplemented by public or private sponsor equity. Based on the assumption that the subordinated debt will represent up to 25% of project costs, this $650 million initially would induce nearly $2.6 billion of projects. However, since the Corporation itself acts as a revolving fund, there is a multiplier effect of secondary loan activity generated by loan payments. Based on rating agency analytic models of potential default experience in a "depression era" scenario for BB caliber debt, we have assumed that up to nine percent of the subordinated debt portfolio could become non-performing. Assuming that there is a two-year construction period before repayments commence, the Corporation would receive $70 million per year from 1995-2000, which in turn, could be relent. These monies would result in over $350 million of second round revolving loans. (In addition, the Corporation would seed to monetize the remaining balance of its performing loans after five years' seasoning by borrowing against or selling off its portfolio, generating further lendable funds.)

2) **Credit Enhancement:** The infrastructure insurance subsidiary would provide a primary insurance financial guarantee on debt service payments for infrastructure projects of BBB caliber, similar to operations of Connie Lee. The credit enhancer could also provide reinsurance to existing bond insurers to free up additional capacity for them. Due to its higher profile, the credit enhancer would probably need to adhere to more strict standards than Connie Lee's 50:1

debt service exposure to capital ratio. We have assumed a 30:1 ratio, which is roughly midway between the leverage ratios used by rating agencies to assess credit enhancer portfolios of commercial real estate mortgages and highly leveraged transactions. The 30:1 debt service-to-capital ratio corresponds to a 15:1 ratio for the par amount of bonds insured to capital. Assuming that half of the debt would be tax-exempt and half would be taxable, the credit enhancer would be insuring issues with an average borrowing rate of 7.5 percent for 20 year borrowings.

3) **Development Risk Insurance (Pre-Construction):** It assumed that NIC would insure the project sponsor against loss on development costs, with a 30% deductible (i.e., a 70% coverage) similar to the Overseas Private Investment Corporation's "political risk" insurance program. If development phase costs are assumed to equal five percent of total project costs, the $100 million in seed capital could ultimately induce $2.8 billion of activity. Projects might still need funding assistance at the construction phase through the guarantor lender, so the induced activity may not be additive to the total. Due to the speculative nature of project development, we have assumed 1:1 reserves against total development risk exposure. The amount of insurance written for any single project would be capped to prevent undue concentration of risk.

Question 4: What obstacles are hindering the use of innovative or alternative financing for infrastructure projects? What can be done to overcome these obstacles?

In my addendum, Mr. Chairman, I talk about the lessons of PURPA (Public Utility Regulatory Practices Act - 1978) and how through a certain federal action having to do with a subsidy for co-generation, an independent power generation industry was created, in essence market entry. We oftentimes find ourselves looking at a mature industry segment in our economy and look for a way to encourage private capital to reinvest and revitalize. The obstacle with infrastructure is that it has been historically wedded to the political process and in a sense is a regulated industry. We addressed similar challenges in telecommunications, natural gas, and even electricity/power generated and the same applies to infrastructure. The obstacles are that we have been weaned on grant programs and municipal bond finance, all part of that regulated political process.

As a result, the entrepreneurs who seek to invest in America's infrastructure - the architects, engineers, etc. - are discouraged and will not move forward because of the lack of one-stop shopping, etc. That's why the tools that we have suggested here will unleash - and I can tell you that we have talked to many people who want to do this - considerable economic activity, e.g. environmental waste treatment plants, high technology toll roads, and even telecommunications. For example, the National Education Association recently testified as to their

desire for retirement systems to have the opportunity to invest in telecommunications infrastructure for schools. They have suggested certain approaches and funding techniques that are very similar to the recommendations contained in our report.

Development risk insurance, credit enhancement, etc. are the basic concepts and I think you would be amazed at what could happen. My thought is that it would mushroom once people saw the full potential. I would also say that the traditional investment banking firms are beginning to explore these new concepts, but it is taking some time. Pension funds have been tax exempt since their inception and as a result they do not communicate with nor are they interested in - except for trading purposes - purchasing municipal bonds. Therefore you have this great chasm between the public finance officials on Wall Street who have dealt exclusively with municipal bond tax exempt finance and the pension funds. Pension funds, are so enormous in size in many instances that many have their own staff and are perfectly capable of performing due diligence and investing in infrastructure on their own if product is available.

Question 5: What can be done to encourage the use of innovative or alternative financing for infrastructure projects?

The establishment of a National Infrastructure Corporation would be a very positive step. We were always impressed with the history of Connie Lee and how - with $18 million as a minority investment in that entity - so much was

accomplished of a positive nature. I must repeat, Mr. Chairman, that we are at the end of an era - the end of the post cold war economy - and we are frankly looking for new ways for capital to replenish and augment our thinning infrastructure across the land. We need in some instances to bring a new paradigm into place so as, with minimal government investment, to maximize potential private capital funding. While I point out in my testimony that the private sector is certainly in a position to establish facilities for development risk insurance etc. - at a minimum, the federal government should begin a process to do likewise because we cannot afford the luxury of waiting any longer. I don't think we want a command and control effort in terms of the design of the financing instruments etc. - it is important that the marketplace be allowed to discern that. The fundamental problem is that entry into infrastructure is the challenge. We must understand that entrepreneurs, who would spend millions of dollars on development fees need assistance, as a revenue stream must be established for that project and there is always political uncertainty. Therefore, the government has to recognize this and provide the tools to address this uncertainty.

Question 6: What are the appropriate roles of Federal, state, and local governments and the private sector in developing innovative and alternative financing?

The National Infrastructure Corporation would serve as an administrative agency providing the aforementioned tools of development risk insurance, credit

enhancement, etc. They would perform this task for their "clients" who would be state revolving funds. In order for states to participate in the program they would have to establish a revolving fund of a multi-agency nature, not exclusively transportation, so as to encourage project development in a variety of areas including environmental. It would be assumed that states could add additional funding to their programs; and I personally know that several states are considering that, particularly California. It is true that these same tools could be initiated by state government; but what we are discussing is a national policy and a role where federal dollars can encourage significant private capital investment. Therefore, we would envision state revolving funds serving as the project facilitator for these types of financings. In other words, if a project from a particular state desires to purchase development risk insurance, they would contact the state offices to do so. We would actively discourage and recommend against a centralized national facility because that would inevitably create a giant bureaucracy. We want the credibility of programs being maintained by the state and that the federal entity - The National Infrastructure Corporation - be kept to a modest size exclusively serving state revolving fund clientele.

Earlier studies, such as Fragile Foundations, endorsed state infrastructure revolving funds. It is practical that the state determine which of their projects can establish the appropriate revenue stream for certain developments. Governor Blanchard (now Ambassador) suggested that the tools available from The National Infrastructure Corporation would have allowed him to decipher what projects were prepared to establish a separate revenue stream that would have

given him the opportunity to then decide how to readjust his grant program/tax exempt finance strategies to deal with projects that could not garner such a revenue stream, e.g. inner city and rural areas.

Essentially, the federal role is to provide the three tools of credit enhancement, development risk insurance, and subordinated debt to the state revolving funds who in turn serve as service centers for the project sponsors, which can include, typically, a very complete group of local officials, architects, environmentalist, etc.

It should be pointed out that the lenders for such projects, both for the short term construction lending and the longterm financing, will expect significant information prior to and during the construction phase of the project. I have personally witnessed the scrutiny upon which such projects must undergo. When private capital is being placed at risk in construction finance, particularly in a situation where the revenue stream does not commence until after the construction phase has been completed - the lenders will be very exact in their requirements. This gives great security to the project because, unlike a grant program where there is 100% risk to the government sponsor and no guarantee of on time completion, here there is every incentive to perform on time. The federal government as a result, in providing these tools to state revolving funds, takes very little risk. The lenders, and the credit rating agencies who are involved through the credit enhancement process, bring disciplines that in many ways provide self insurance to the Corporation's activities.

We can assure you that our witnesses were very impressive as to the innovations that they would sponsor. That is their business, working in inventive ways, so that the project can be considered by the private sector for innovative financing techniques.

The subordinated debt provisions mentioned earlier are brought into play as a loan when in some instances the project is close to financing but needs to add to its equity side. This is the one area where we would assume a modest amount of loss, but we made such assumptions when determining what the leverage would be for our program.

Financing by the federal government, in this instance, is essentially a one time phenomenon as to equity investment in these insurance disciplines. Assuming significant success, Congress may want to increase the amount of financing, particularly on the subordinated debt side. Once a project begins receiving revenues from the services being rendered, it no longer is part of The National Infrastructure Corporation Revolving Fund enterprise - and is spun off to begin its commercial life thus allowing the resources from the Corporation and the revolving fund to be replenished and to resume discussions of financing for other projects.

In conclusion, Mr. Chairman, it has been my pleasure to serve as Chairman of the Infrastructure Investment Commission and to appear before you today. I do look forward to working with you and your staff during the coming

years, particularly as Congress begins consideration of the reauthorization of The Intermodal Surface Transportation Efficiency Act. I would hope that could be the vehicle for action on our recommendations. I do hope that it is understood that while transportation might be the cutting edge for our proposals - they do incorporate other infrastructure modes and that whatever legislation is drafted should not be generically exclusive but rather focus on the marketplace and the new ideas that can evolve throughout the infrastructure spectrum.

I can assure you that, just as American firms are actively involved around the world in energy and telecommunications infrastructure projects, with the experience of project finance in these other modalities of infrastructure, those global markets will also enjoy American expertise.

Thank you very much I look forward to your questions.

ADDENDUM

During the course of our hearings, I was struck by the fact that one witness, Bill Chew from Standard and Poors - a nationally recognized expert on bond ratings made the comment that what we were doing reminded him of PURPA, which stands for the Public Utilities Regulatory Practices Act. The Act spawned the independent power industry at a time when virtually all power plants were "built" by utilities. The perception was that no one else could do it. Today we find that the bulk of our power plants are being built by independents injecting new technology and private capital. It is an interesting analogy and one I am personally familiar with having led in the Public Utility Holding Company Act (PUHCA) reform effort. In fact, earlier efforts in related industries only further my confidence in our recommendations. The key is entry. Private capital has the attribute of encouraging entrepreneurs, something that we have not had very much of in our nation's regulated infrastructure. While the best at systems management, the United States is falling behind in our infrastructure technology according to recent studies. There has been this discussion of public/private partnerships which I salute. Real benefits will come from a marketplace approach that will provide intrinsic competition to the existing infrastructure networks and, in the long run, elevate infrastructure matrix to a higher standard.

Our recommendations have no real opposition. We have put together suggestions that have been very well received and, as a result, I would urge you to

consider them seriously. Additionally, there is nothing in the law that precludes the private sector from pooling their resources and developing similar tools to those recommended for the federal government. The private sector can easily form private development risk insurance companies, credit enhancement facilities, etc.. The problem, to date, is that they have not for non-tax exempt investment securities. The federal government, as a result, should take the initiative here in the context of leveraging the federal dollar. A modest stipend for this activity on the federal side will multiply to a significant extent what the federal dollar can do through the states. In truth, you can more readily address the needs of the inner city and rural America by bringing on this additional capacity of user fee application. You do grow the pie.

Years ago, I had the pleasure of the friendship of Mr. Ray Lapin, a fellow San Franciscan, who had been the head of Federal National Mortgage Association (FNMA) in the Johnson Administration and while there established the GNMA program. At the time I had just returned from Naval service in VietNam and was a young investment consultant working with pension funds around the country. Ray and I were talking about this activity back in our own home town during a political campaign and Ray noted that GNMA's would be the perfect investment opportunity for pension funds. Mind you this was in 1971. No one knew what a GNMA was in those days and of course the rest is history. I have explained many times, particularly to Senator Moynihan who had a significant role in ISTEA, that what Ray Lapin had in mind with GNMA for housing - we must find something similar for infrastructure.

There are numerous projects across the land, e.g. rebuilding bridges, that can stand the test of a time-certain user fee and with a funding scheme allocated over a 30 year depreciation period the cost to the consumer will be on a par with the current financing techniques. The point, as always, is that we must do more. We cannot afford, as a nation, to freeze out the vast resources contained in America's institutionally managed accounts, particularly the pension funds. During our testimony the state of Colorado made it very clear, in terms of their public employee retirement system, that they had an in-state investment goal of 20% (i.e, funds from their pension funds would be helping the economy of that state to the amount of 20% of their portfolio). They were only at seven percent at the time and had run out of ways to invest in their own state of Colorado. I would imagine that would apply throughout the country and that there is a certain urgency to taking action on the recommendations we have suggested.

The Infrastructure Investment Commission was created with this challenge in mind, performed extremely well, and had exceptional expertise including former Secretary of Transportation Neil Goldschmidt. After numerous hearings we delivered our recommendations in our report a year ago. To summarize those recommendations, let me simply say that private institutional capital invested in our own nation's infrastructure is long overdue.

Attachment A

Assembly Bill No. 1495

CHAPTER 94

An act to add Title 6.7 (commencing with Section 63000) to the Government Code, and to amend Sections 50054, 50150, 50154, 50176, 50185, 50187, 50190, 50193, 50196, 50663, 50687, 50837, 50900, 50901, 50902, and 50908 of, and to amend the heading of Part 3 (commencing with Section 50900) of Division 31 of, the Health and Safety Code, relating to economic development, and making an appropriation therefor.

[Approved by Governor June 6, 1994. Filed with Secretary of State June 6, 1994.]

LEGISLATIVE COUNSEL'S DIGEST

AB 1495, Peace. Economic development and infrastructure.

Existing law does not provide for the financing of an interconnected system of public improvements that includes, among other things, city streets, county highways, public transit facilities, sewage collection and treatment facilities, local water treatment and distribution facilities, solid waste collection and disposal facilities, and drainage and flood control facilities.

This bill would enact the Bergeson-Peace Infrastructure Bank Act that would create the California Infrastructure Bank within the California Housing Finance Agency, which would be renamed the California Housing and Infrastructure Finance Agency. The bank would have responsibilities designed to carry out the purposes of the act. The bill would create within the State Treasury the California Infrastructure Bank Fund which shall include a Sponsor Revenue Bond Account, a Participating Party Revenue Bond Account, a Grant Account, a Bond Guarantee Trust Account, and a State Infrastructure Revolving Account, and which would be continuously appropriated for purposes of the act.

The bill would create the California Infrastructure Guarantee Trust Fund which would be continuously appropriated to insure accounts within the infrastructure bank fund, except moneys in the infrastructure bank fund would be available for administration only upon appropriation by the Legislature.

This bill would not become operative until the Legislature receives written notice from the Governor that he or she has determined that sufficient funds are currently available to implement the provisions of the bill.

This bill would provide that it shall become operative only if SB 101 is enacted and becomes effective on or before January 1, 1995.

Appropriation: yes.

The people of the State of California do enact as follows:

Chapter 3. California Infrastructure Bank Fund

Article 1. General

63050. (a) There is hereby created in the State Treasury the California Infrastructure Bank Fund for the purpose of implementing the objectives and provisions of this division. Within the fund there shall also be established a Sponsor Revenue Bond Account, a Participating Party Revenue Bond Account, a Grant Account, a State Infrastructure Revolving Account, a Bond Guarantee Trust Account, and additional accounts and subaccounts that the bank may establish from time to time.

(b) Notwithstanding Section 13340 and except as provided in subdivision (c), all moneys in the infrastructure bank fund are continuously appropriated without regard to fiscal years for the support of the bank and shall be available for expenditure for the purposes stated in this division.

(c) Moneys in the infrastructure bank fund shall be available for expenditure for general administration only upon appropriation by the Legislature. This subdivision shall not limit the authority of the bank to expend funds directly related to the servicing and administration of approved debt. No more than 5 percent of state general obligation bond revenues administered by the bank pursuant to this division may be expended for administrative costs.

(d) Notwithstanding any other provision of this division, not more than 15 percent of the financing annually approved by the executive director that utilizes state funds from the infrastructure bank fund may be expended upon educational facilities, environmental mitigation measures, and parks and recreational facilities.

(e) The executive director may transfer funds between the infrastructure bank fund and the guarantee trust fund when appropriate to accomplish the financing objectives of this division.

63051. The Bond Guarantee Trust Account within the infrastructure bank fund shall consist of funds approved by voters in general obligation bond acts that shall be used to guarantee bonds issued for general or specific purposes. The bank may pledge any or all of the amounts in the account authorized as a guarantee for payment of bonds issued pursuant to this chapter, including the redemption price of bonds, the payment of trustee's fees, or other similar obligations, if all of the following requirements are met:

(a) General obligation bonds have been authorized for issuance by the bond finance committee.

(b) A loan from the Pooled Money Investment Account has been authorized by the Pooled Money Investment Board in an amount equal to or less than the amount of the bond authorization and the proceeds have been deposited in the Bond Guarantee Trust Account.

(c) General obligation bonds have been issued, the proceeds of which are to be deposited in the Bond Guarantee Trust Account.

63052. (a) The bank may pledge any or all of the moneys in the fund, including the Grant Account, as security for payment of the principal of, and interest on, any particular issuance of bonds issued pursuant to this chapter. For these purposes, or as necessary or convenient to the accomplishment of any other purpose of the bank, the bank may divide the fund into separate accounts or subaccounts. All moneys accruing to the bank pursuant to this division from any sources shall be deposited in the fund.

(b) Subject to priorities that may be created by the pledge of particular moneys in the infrastructure bank fund to secure any issuance of revenue bonds of the bank or a sponsor, and subject further to reasonable costs that may be incurred by the bank in administering the program authorized by this division, all moneys in the infrastructure bank fund derived from any source, shall be held in trust for the security and payment of revenue bonds of the bank or a sponsor and shall not be used or pledged for any other purpose so long as the revenue bonds are outstanding and unpaid. However, nothing in this section shall limit the power of the bank to authorize a sponsor to issue revenue bonds payable from revenues or to make loans with the proceeds of revenue bonds in accordance with the terms of the resolution authorizing the revenue bonds.

(c) Pursuant to any agreements with the holders of revenue bonds pledging any particular assets, revenues, or moneys, the bank may create separate accounts or subaccounts in the infrastructure bank fund to manage these assets, revenues, or moneys in the manner set forth in the agreements.

(d) The bank may, from time to time, direct the Treasurer to invest moneys in the infrastructure bank fund that are not required for its current needs, including proceeds from the sale of any bonds, in any eligible securities specified in Section 16430 as the bank shall designate. The bank may direct the Treasurer to deposit moneys in interest-bearing accounts in any bank in this state or in any savings and loan association in this state. The bank may alternatively require the transfer of moneys in the infrastructure bank fund to the Surplus Money Investment Fund for investment pursuant to Article 4 (commencing with Section 16470) of Chapter 3 of Part 2 of Division 4 of Title 2. Notwithstanding Section 16305.7, all interest or other increment resulting from the investment or deposit of moneys from the infrastructure bank fund shall be deposited in the infrastructure bank fund. Moneys in the infrastructure bank fund shall not be subject to transfer to any other funds pursuant to any provision of Part 2 (commencing with Section 16300) of Division 4 of Title 2, except to the Surplus Money Investment Fund.

(e) Subject to any agreement with holders of particular bonds, in furtherance of Section 51373 of the Health and Safety Code, and to the extent permitted by law, the bank may also invest moneys of the infrastructure bank fund, including, but not limited to, proceeds of any of its bonds or refunding bonds, in obligations of financial

institutions as are permitted by board resolution. The bank may alternatively require the transfer of moneys in the infrastructure bank fund to the Surplus Money Investment Fund for investment pursuant to Article 4 (commencing with Section 16470) of Chapter 3 of Part 2 of Division 4 of Title 2.

(f) Subject to any agreement with the holders of particular bonds, all interest or other increment resulting from the investment or deposit shall be deposited in the infrastructure bank fund, notwithstanding Section 16305.7. Moneys in the infrastructure bank fund shall not be subject to transfer to any other fund pursuant to Part 2 (commencing with Section 16300) of Division 4 of Title 2, excepting the Surplus Money Investment Fund.

(g) All moneys in the infrastructure bank fund, in excess of current requirements and not otherwise invested, may be deposited by the bank from time to time in financial institutions authorized by law to receive deposits of public moneys.

(h) The infrastructure bank fund shall be organized as a public enterprise fund.

(i) The bank shall cause all moneys in the infrastructure bank fund that are in excess of current requirements to be invested and reinvested, from time to time.

63053. (a) The bank may administer and distribute among its accounts and subaccounts, at its discretion, the revenues from any general obligation bonds issued in accordance with the State General Obligation Bond Law (Chapter 4 (commencing with Section 16720) of Part 3 of Division 4 of Title 2).

(b) The assets of the infrastructure bank fund shall be available for the payment of the salaries and other expenses charged against it in accordance with this division.

63054. All expenses incurred in carrying out the purposes of this division shall be payable solely from funds provided pursuant to this division, and no liability or obligation shall be imposed upon the state and none shall be incurred by the agency beyond the extent to which money shall have been provided pursuant to this division.

63055. (a) Moneys in the infrastructure bank fund received from the proceeds of bonds issued pursuant to this division may not be transferred to any other fund except as necessary to pay the expenses of operating the program authorized by this division, nor shall the bank utilize any moneys under the direction and control of the agency, including, but not limited to, moneys in the California Housing Loan Insurance Fund and the Housing Finance Fund, other than moneys in the infrastructure bank fund to satisfy liabilities arising from projects authorized by this division.

(b) The infrastructure bank fund, on behalf of the bank, may borrow or receive moneys from the bank or from any federal, state, or local agency or private entity, in order to create reserves in the infrastructure bank fund as provided in this division and as authorized by resolution of the board.

63056. Notwithstanding Chapter 2 (commencing with Section 12850) of Part 2.5 of Division 3 of Title 2 and Article 2 (commencing with Section 13320) of Chapter 3 of Part 3 of Division 3 of Title 2, expenditures of the infrastructure bank fund shall not be subject to the supervision or approval of any other officer or division of state government. However, the bank's budget respecting the infrastructure bank fund shall be prepared and reviewed in accordance with Section 50913, and, not later than November 1 of each year, the agency shall submit to the Legislature a report of its activities for the prior fiscal year.

Chapter 4. California Infrastructure Guarantee Trust Fund

63060. (a) There is hereby created in the State Treasury the California Infrastructure Guarantee Trust Fund.

Notwithstanding Section 13340 and except as provided in subdivision (b), all money in the guarantee trust fund is hereby continuously appropriated to the bank without regard to fiscal years for the purpose of insuring all or a portion of the accounts and subaccounts within the infrastructure bank fund, any contracts or obligations of the bank or a sponsor, and all or a part of any series of bonds issued by the bank or by a sponsor pursuant to this division, and for the purpose of defraying administrative expenses incurred by the bank in operating the programs of loan and bond guarantee. All insurance premiums received by the bank for insurance, guarantees, or enhancements provided pursuant to this division shall be deposited in the guarantee trust fund. The guarantee trust fund is authorized to guarantee all or a part of any of the accounts and subaccounts within the infrastructure bank fund, any contracts or obligations of the agency or a sponsor, and all or part of any series of bonds issued by the agency or by a sponsor and to authorize payment on any guarantee or enhancement of the guarantee trust fund.

(b) Moneys in the infrastructure bank fund shall be available for expenditure for general administration only upon appropriation by the Legislature. This subdivision shall not limit the authority of the bank to expend funds directly related to the servicing and administration of approved debt.

63061. Notwithstanding Chapter 2 (commencing with Section 12850) of Part 2.5 of Division 3 of Title 2 and Article 2 (commencing with Section 13320) of Chapter 3 of Part 3 of Division 3 of Title 2, expenditure of the guarantee trust fund shall not be subject to the supervision or approval of any other officer or division of state government. However, the bank's budget respecting the guarantee trust fund shall be prepared and reviewed not later than November 1 of each year and the bank shall submit to the Legislature a report of its activities for the prior fiscal year.

Attachment B

Daniel V. Flanagan, Jr.

President and Chief Executive Officer, The Flanagan Group, Inc.

Daniel V. Flanagan serves as the President and Chief Executive Officer of The Flanagan Group, Inc. Mr. Flanagan has had his own governmental and public affairs consulting office in Washington, D.C. area since January 1982. During this time, while specializing in industry restructuring and regulatory efficiency strategies, he has worked on a range of complex issues at both the legislative and executive branches of government. These include: The Clean Air Act, Federal Energy Regulatory Commission (FERC)/competitive bidding, nuclear licensing reform, tax reform, Public Utility Holding Company Act (PUHCA) reform and North American Free Trade Agreement (NAFTA).

He was appointed by the Speaker of the United States House of Representatives, to serve on the Congressional Infrastructure Investment Commission, and was elected as Chairman by his fellow members. He was honored for that work by the Construction Writers of America as their "1993 Construction Industry Man of the Year" for the inventive financing methods recommended to the Congress (ISTEA 1995 - 1996). He has appeared before dozens of audiences throughout the country concerning this effort.

* * * * *

Recently, his firm represented 35 major electric utility companies across the country who united in a successful effort to reform the Public Utility Holding Company Act and encourage a competitive market in electric generating capacity as part of the "National Energy Policy Act" passed by Congress and signed into law in October 1992, with Mr. Flanagan in attendance, by President Bush. The results of that action in restructuring the electric utility industry are now being seen everyday in American newspapers.

Last year, Mr. Flanagan's firm was retained by the Mexican government (SECOFI) to evaluate the various elements of that nation's infrastructure, due to past experience with similar industries in the United States, as part of the NAFTA effort and served as an advisor in the development of the financing strategy for the commissions established in the side agreements between the two nations.

Currently, Mr. Flanagan is assisting the National Education Association in the design of a strategy for financing, via pension fund investments, the telecommunications infrastructure for our nation's schools within both the Elementary and Secondary Education Act reauthorization and the Communications Act of 1994 legislation, now pending. The firm is also representing Thyssen Henschel America, Inc. in an effort to assist with that company's high-speed transportation technology.

* * * * *

From 1977 until opening his own business, Dan Flanagan directed the Washington D.C. governmental affairs office for Southern Pacific Company. During his tenure with Southern Pacific, he focused on multiple issues including trucking and railroad deregulation (he attended the signing of the Staggers Act by President Carter), coal slurry, reclamation, and telecommunications (Sprint)/AT&T divestiture, as Southern Pacific founded SPRINT at that time.

Prior to joining Southern Pacific Company, he spent five years working with health benefit and retirement plans throughout the country and Canada with the following firms in both New York and San Francisco: White, Weld & Company, Wertheim & Company (Martin E. Segal Company) working on ERISA legislation in 1973, and Milton Meyer & Company.

* * * * *

A native of San Francisco, California and a graduate of the United States Naval Academy, Mr. Flanagan served five years in the Navy. Two of those years were VietNam assignments.

Dan and his wife, Fonny, have two sons and reside in Virginia. He is a member of the Business-Governmental Relations Council, other professional organizations, the Washington Golf and Country Club and the Middleburg Tennis Club. He currently serves as a member on the Board of the United States Navy Memorial Foundation.

Active in national Democratic Party politics, he has served as Chairman of various campaigns, political action committees, and was a founder of the Democratic National Committee headquarters building on Capitol Hill.

Clients currently being represented by Mr. Flanagan's firm are the following: Dominion Resources, Virginia Power, Duke Power, Thyssen Henschel America Inc., Bechtel Corporation, Mexico, National Education Association, and Forrestal Corporation.

Other client relationships include: Utility Working Group, ENVIPCO, Association of American Railroads, Port of San Francisco, Fritz Company, and Southern Pacific.

NATIONAL UTILITY CONTRACTORS ASSOCIATION
4301 N. FAIRFAX DRIVE
SUITE 360
ARLINGTON, VIRGINIA 22203-1627
(703) 358-9300 FAX (703) 358-9307

Statement of Richard L. Foster
Region 2 Vice President and
Chairman, Government Relations Committee
National Utility Contractors Association

before the

Subcommittee on Investigations and Oversight
Committee on Public Works and Transportation
U.S. House of Representatives

Wednesday, July 13, 1994

Two Potential Water and Wastewater Infrastructure Financing Techniques:
(1) State Water and Wastewater Trust Funds; and
(2) Privatization of Public Facilities

CONSTRUCTORS OF WATER, SEWER AND UNDERGROUND UTILITY SYSTEMS

My name is Dick Foster, and I am Chairman, Chief Executive Officer, and Treasurer of PKF-Mark III, Inc., an employee-owned construction company located in Newtown, Pennsylvania. Our firm has received contracts for over 120 water and wastewater treatment plant projects since 1967, our founding year. These public and private projects are located in Pennsylvania, New Jersey, New York, Massachusetts, and Arizona. I also serve on the Executive Committee of the National Utility Contractors Association (NUCA), which represents the industry that builds and maintains water, wastewater, gas, and other utility projects and supplies the equipment, materials, and services necessary for construction.

The four previous hearings in this series of infrastructure hearings have clearly demonstrated the need for substantial new federal investment in public works facilities, including water quality projects. The hearings have also revealed enormous economic, environmental, and social costs that result from the failure to provide adequate levels of investment. It is also clear that constraints on the federal domestic discretionary budget require that serious consideration be given to new sources and methods of infrastructure financing.

My testimony today examines two techniques for financing water and wastewater projects, which can supplement financing provided by state revolving funds.
State Water and Wastewater Trust Funds are a potential new application of a proven infrastructure-financing method. Privatization, which entails a public-private partnership, has proven to be a viable financing alternative in the water and wastewater field.

State Water and Wastewater Trust Funds

The Water and Wastewater Trust Fund Concept

Creation of a national drinking water and wastewater investment trust fund was first addressed in *America's Environmental Infrastructure: A Water and Wastewater Investment Study* (1990), published by the Clean Water Council. The proposed national fund was designed to complement Title II and Title VI programs under the Clean Water Act. The fund would be less vulnerable to deficit-reduction measures and would include drinking water investments as well as wastewater investments. Analogous to the Highway Trust Fund, the revenues for this fund would come from user fees based on gallons of water consumed and/or wastewater discharged. Chapter Four of the study describes the original trust-fund concept and is included as Appendix A.

A New SRF Context

Since the national water and wastewater trust-fund idea was first advanced in 1990, events have transpired that compel re-evaluation of the concept. In particular, the wastewater SRF program has matured and largely succeeded in its mission. It has been so successful, in fact, that the Administration has budgeted for the capitalization of a new drinking water SRF Program, and Congress has appropriated funds for the proposed program two years in a row, pending its authorization. We understand that the solid-waste disposal industry has also expressed strong interest in the SRF model. It is probably safe to assume that the SRF program is here to stay and will be emulated. As previously mentioned, severe constraints on the federal domestic discretionary budget also oblige us to take a second look at the trust-fund idea.

The water and wastewater trust-fund concept works well in today's context, with some changes that respond to present conditions. Specifically, problems remain with SRF financing that might be remedied by state trust funds. Valuable lessons are available from many years experience with the transportation trust funds and especially with recent advances under the 1991 ISTEA legislation.

Continued Financing Gaps Despite SRF Funds

Some have asserted that continued capitalization of the SRF program to generate between $2 and $2.5 billion a year is all we need to finance wastewater infrastructure nationwide. We disagree for several reasons.

First, even at this investment level, needs will far outpace financing capacity. In 1980, the U.S. EPA and the states estimated that some $125 billion would be needed to build wastewater infrastructure at levels that would ensure compliance with national standards for surface-water quality. Over the next ten years, the nation spent nearly $75 billion to build wastewater infrastructure. Scores of worthwhile facilities were brought on line, and one would logically assume that during this period needs would decline dramatically. Interestingly, just the opposite occurred. The U.S. EPA's 1992 needs estimate totalled some $137 billion and at that, seriously underestimated the cost of correcting combined sewer overflow problems.

The backlog in wastewater collection and treatment needs is structural, at least for the next decade or so. The annual accrual of costs to replace outdated or undersized facilities in some locations will just match expenditures for construction of new capacity. On balance, even expenditures at current levels of $6-8 billion a year may never reduce needs as currently calculated.

With cost estimates this large and needs so greatly outstripping current payments, one conclusion is plain--a bruising national debate on insufficient increases in appropriations to

existing programs will be useless if our overall goal is improved water quality. Whatever marginal gains in public expenditures that could possibly be expected to emerge from such a debate, especially given today's fiscal realities, will be dominated by newly discovered demands and changes in how statutes define what is and is not needed.

Second, many communities cannot afford to participate in the program. The wastewater SRF Program was designed to get the federal government out of the business of providing project grants to local communities indefinitely and replace this system (Title II of the Clean Water Act) with one that imposes more fiscal discipline on local investment decisions. The new system does this by capitalizing state loan funds designed to revolve with new loans as payments are received from existing loans. In theory, we have a source of wastewater financing that will exist in perpetuity.

Of course, the only way the state SRFs can revolve is if financing goes out as loans and loans are repaid. This restricts the market for SRF-financed projects to only those communities that can afford to repay loans. Many states have testified that demand for SRF financing is lower than projections because many communities simply cannot afford even heavily subsidized or no-interest loans. In effect, the wastewater SRF Program reduces the cost of capital for otherwise creditworthy communities but leaves small and economically disadvantaged communities no better off. No amount of continued capitalization of this program will address these needs. Moreover, many of these communities are precluded from participation in other assistance programs, such as the Rural Development Administration's water and waste disposal grant and loan programs.

Finally, the wastewater SRF Program was primarily designed to finance capital facilities for the control of point-sources of water pollution. While point-source needs are still enormous and should remain the central focus of infrastructure investment, additional water quality problems involve agricultural and urban runoff. While it is true that the wastewater SRFs are authorized to finance non-point source controls and other types of water pollution control investments, few of these projects qualify for loans under the terms that a fiscally responsible SRF program must operate. Again, no amount of continued capitalization of the wastewater SRF Program will address these secondary water quality problems.

Financing gaps will also plague drinking water SRF programs when they are up and running. A new approach is needed to meet these gaps.

An Alternative Trust-Fund Approach

Here is one example of how state-administered water and wastewater trust funds could be structured to provide grants and other types of assistance that work in concert with established SRFs.

Congress could authorize states to create new water and wastewater trust funds within a certain time period (e.g., three years) that would be capitalized with nominal fees on water use or wastewater generation collected from users within their states. If states failed to create their own trusts, the federal government would be authorized to create one and operate it for the states. Such a mandated financing arrangement is not unprecedented. In fact, Congress employed a similar arrangement in the 1990 Clean Air Act, mandating that states finance their Title V air permit programs with emissions fees. Establishing the trust funds at the state level also circumvents problems with federal domestic discretionary spending caps and avoids prescriptive micro-management by the federal government.

The state trust funds must be flexible to meet the water quality and drinking water needs that vary from one state to another. Furthermore, they must be designed to serve as an additional tool to complement state SRFs and other forms of assistance currently available for water projects. The key is that states must be provided opportunities to use these funds creatively. For example, they would be authorized to provide a wide range of assistance including matching grants, means-tested subsidies without a match, credit enhancements, or capital to purchase SRF-securitized portfolios to provide additional liquidity to SRFs. Capitalization could be leveraged. Funds could be used for financing investments in non-point source projects and pollution prevention projects. Funds could be used to build publicly or privately owned projects, or they could be used in public-private partnerships. Again, such flexibility is not unprecedented--Congress provided state DOTs great latitude in the ways they could operate highway revolving funds under the 1991 ISTEA legislation.

Capitalizing State Trust Funds

Two key issues are the nature and economic effects of alternative sources of funds to capitalize state trusts. Two potential sources are water use fees and wastewater generation fees.

Water Use Fees. A broad-based and administratively simple user fee levied on residential, agricultural, and industrial users would entail a fixed charge per gallons used. The revenue potential from a water usage fee is large. Using recorded withdrawals of publicly supplied water, a 5-cent fee per 1,000 gallons withdrawn has been estimated to yield revenues of $6.3 billion for the period 1993-2000. Increasing the fee to 10 cents per 1,000 gallons would yield $12.5 billion for the period At 20 cents per 1000 gallons, revenues would equal $25.1 billion over the same period.

This illustration assumes no reduction in water use (i.e., no elasticity of demand). While such an assumption appears valid for residential users, the imposition of a fee would probably lead to a drop in demand by industrial users, who are more sensitive to price changes than individual households. Industrial users represent about 16 percent of total water demand. Even if that demand fell by 50 percent in response to the fee, total revenues would only fall slightly, to $5.8 billion, $11.5 billion, and $23.1 billion respectively.

Translating this fee into an impact on households shows that it results in a relatively small user burden. At the highest fee rate of 20 cents per 1000 gallons, average household water bills would increase by less than 10 percent, which is $20.25 to $26.98 per household per year.

There are some additional issues that would need to be addressed before a water use fee is implemented. First, for unmetered users, water use would have to be approximated. The current system used by cities to estimate annual usage by unmetered users could be used for fee-assessment purposes. However, imposing a fee on self-suppliers of water is more problematic. The fee would be politically unpopular and difficult to collect at the household level, as measurement would be all but impossible without installing meters at every wellhead. Some would argue that those who don't use the infrastructure shouldn't have to pay for it. On the other hand, not charging such users would also be politically unpopular because self-suppliers of water can affect the water table and hence the costs of public system withdrawals in adjacent areas that draw from the same aquifer. Many of these self-suppliers also use septic systems for wastewater treatment, which can also affect community water quality. Therefore, an argument could be made for charging these users some lower rate. In 1985, approximately 17 percent of U.S. households supplied their own water through private wells. Assuming that this percentage has not changed significantly, a 3-cent fee per 1000 gallons levied on self-suppliers could raise an additional $345 million from 1993-2000.

Wastewater Charges. A fee on wastewater charges could take several forms. The Clean Air Act (see above) offers one model. Ideally, the amount and/or toxicity of wastewater generated could be monitored and a fee levied per gallon, per unit of controlled pollutant, or some combination of the two. In practice, the fee could be based on permitted limits rather than on actual discharges. In addition, issuance of the permit could be made contingent upon fee payment. Data on permitted levels of effluent discharge is available under the National Pollutant Discharge Elimination System (NPDES) established under the Clean Water Act. (All point source dischargers must secure a NPDES permit before they can discharge to U.S waterways). The permits also show the estimated effluent content discharged and its total volume. A fee could thus be levied on either the effluent limits as specified in the permit or made a function of the permit's estimate of actual discharge levels and content.

A simpler alternative would be to levy fees on the same basis that household wastewater rates are charged--using water use as a proxy for wastewater discharge volume. This would restrict the fee to a percentage of the volume generated and not capture effluent concentration.

Revenue effluent charges could be substantial. Using recorded releases of wastewater from publicly owned treatment facilities as an estimate of total volume, while underestimating true volume (because it excludes commercial facility discharges), gives some idea of the possible revenues. For example, a fee of 5 cents per 1000 gallons discharged would yield $5.3 billion over the seven-year period 1993-2000. Increasing it to 10 cents

would yield $10.6 billion, and a charge of 20 cents per 1000 gallons discharged would raise $21.3 billion over the period.

These estimates also assume no reduction in water use. In this sample as well, approximately 16 percent of the volume discharged was industrial. Even if that demand fell by 50 percent in response to the fee, revenues would only fall slightly, to $4.9 billion, $9.8 billion, and $19.6 billion, respectively.

The fee would result in a relatively small user obligation for households, increasing household wastewater bills by $20.25 to $26.98 per year, on average, at the highest fee rate. The levy would increase wastewater rates, as a percentage of median household income, from .52 percent to between .59 and .61 percent.

In the case of both water use fees and wastewater fees, states could grant limited exemptions from payment, especially in economically disadvantaged communities.

Federal Matching of State Trust Fee Revenues

As an incentive to establish state trusts and capitalize them, the federal government could offer to match state fee revenues. One example is a dollar-for-dollar federal match, up to a cap or perhaps over a limited time period. States that failed to deposit fees in their trust would forfeit this federal match. This incentive has obvious negative effects on the federal budget deficit and could be constrained by the cap on domestic discretionary spending.

Avoiding Cross-Subsidies

A major concern with using fees to finance grants is that affected parties may object to subsidizing other localities' projects. This problem could be partially addressed by ensuring that no city or town would receive less than some percentage of their total revenues over a set time period, perhaps five years. In addition, the fees and taxes outlined above would have to be carefully structured to ensure consistent and fair treatment of affected parties. The provision of federal matching funds (see above) would also help mitigate this problem by increasing the total amount available for water and wastewater projects within each state.

Providing Liquidity to SRFs

The state trusts could be used to provide liquidity to infrastructure financing agencies. For example, trusts could purchase and securitize unleveraged loan portfolios (packages of outstanding loans). The additional liquidity provided to states could then be used to make loans to local communities for new projects. This strategy could help states achieve their

water quality goals more quickly. The repayment of the purchased loans provides a revolving source of capital for future activity.

This trust structure would have the additional advantage of supporting the market discipline already imposed on SRF lending activities. Also, if trusts purchased the loans at par value, the SRF would enjoy renewed liquidity with no capital loss. As these loans would probably trade at a slight discount, however, trusts would need to make up the loss, which they could do by setting aside an income earning reserve account.

Leveraging State Trust Revenues

Borrowing and investment earnings are two revenue options that could be made available to the trusts. Trusts could obtain further revenue if they were granted the authority to issue tax-exempt revenue bonds, whose repayment was secured by direct loans to or loan purchases from state infrastructure agencies. Such financing could be enhanced by exempting trust-fund issues from rebate and advanced refunding requirements.

The trusts could also leverage the repayment stream of loan portfolios or outstanding bond issues, purchased from state insurance agencies, by pooling the purchased loan portfolios or bond issues and issuing securities backed by these pooled liabilities. These securities would then be traded. The pooled loan portfolios, or bond issues (each backed by a specific set of local loans), serve as the backing for the traded security, just as a pooled set of mortgages backs the securities issued by Fannie Mae.

Federal Oversight Requirements and Administration of State Trusts

At a minimum, each trust would submit an annual report and audit of its operations to the cognizant federal agency--perhaps the U.S. EPA. These documents would detail, among other things, all grant recipients and the amounts of their awards and describe the trust's lending and purchasing activities.

The trusts would be administered by trustees appointed by each state's governor, perhaps with the U.S. EPA Regional Administrator as an ex-officio member of each trust established within his or her jurisdiction. The trustees would establish the policy governing investment, disbursement of funds, and fee setting and collection, consistent with statutory requirements. All administrative costs of trust operations would be paid by the trusts themselves.

Conclusion

The projected capital shortfall for water and wastewater infrastructure will exceed $50 billion from 1993-2000. At the same time, increasingly fierce competition for appropriations from general revenues necessitates a new dedicated revenue source. State trust funds tied to user fees are a possible solution. Our statement today is simply an attempt to raise important issues and options pertaining to a financing method that may have merit. Further study of the trust-fund concept, including economic models, is needed.

Rep. Bob Franks (R-N.J.), a member of this committee, has introduced legislation (H.R. 4475) that authorizes the U.S. EPA to conduct a study of alternative financing sources for clean water infrastructure. The measure has received strong bipartisan support. In addition, Merchant Marine Committee Chairman Gerry Studds (D-MA) worked with the House Appropriations Subcommittee on VA, HUD, and Independent Agencies to secure funding for this study next year.

Public/Private Partnerships

This portion of my statement draws from and updates an article entitled "Privatization of Public Facilities: Panacea or Pipe Dream?," which appeared in the March 1993 issue of *The National Utility Contractor*. The article is included as Appendix B.

To some, the privatization of public water and wastewater facilities represents an elixir to the nation's budgetary and environmental ills. They envision battle-hardened private companies, with white hats, riding in to save towns being held hostage by burgeoning pollution problems and government regulations. But others see a darker, more ominous picture. They fear that privatization strips valuable assets from the public domain, erodes accountability for vital services, and costs hard-working people their jobs. In reality, both sides miss the mark. The privatization of water and wastewater facilities, though not a panacea, provides a viable alternative for financially strapped states and local governments to address their environmental needs.

Simply, privatization entails a public-private partnership created to efficiently deliver services that are traditionally supplied by a public entity. The nature of these partnerships varies widely, as do the techniques and activities they encompass.

A Brief History

Privatization in the United States dates back to the nineteenth century, when privately owned and operated toll roads and bridges were common. But privatization of water and wastewater systems received little attention until the late 1970s when private investment in

infrastructure was enhanced by changes in the federal tax code. Increased private-sector access to tax-exempt debt and tax-deductible interest payments on that debt substantially reduced borrowing costs. Private involvement was further buoyed in the early 1980s by the pro-market strategies of the Reagan administration.

Privatization momentum was stalled in 1986 by tax-reform legislation that discontinued the investment tax credit and re-established longer depreciation schedules on most infrastructure. The reduced tax incentives significantly decreased private interest in owning public facilities.

Looking to rekindle interest in privatization and bolster the economy, the president issued an executive order in April, 1992, that removed many regulatory impediments and encouraged state and local governments to sell or lease infrastructure assets obtained with federal assistance. The president ordered the EPA to issue policy guidance to permit increased private participation in wastewater treatment facilities as well as the privatization of existing plants. Citing tremendous environmental needs, the president sought to help local governments fund facilities critical to economic development and clean water.

"Private enterprise and competitively driven improvements are the foundation of our nation's economy and economic growth," the president stated in the order. "Federal financing of infrastructure assets should not act as a barrier to the achievement of economic efficiencies through additional private market financing or competitive practices, or both."

A second executive order issued in January, 1994, directs federal agencies to seek private sector participation in infrastructure.

Types of Privatization

Privatization partnerships vary greatly, but in the water/wastewater field, they can generally be divided into three categories: design and construction, operation and maintenance, and ownership.

Private design and construction of treatment plants and collection and delivery systems are commonplace in the U.S. The typical scenario includes a private developer with a parcel of land to develop and a municipality that lacks the money or the incentive to provide the necessary clean water support. Financing and risk are allocated in contract negotiations and are generally shared to varying degrees.

Basically Business as Usual

M.A. Bongiovanni, Inc., a NUCA contractor based in Syracuse, N.Y., was part of such a relationship in 1989 when it built a new sewage treatment plant to replace a small,

outdated one in Maryland City, Md. A large Washington, D.C.-area developer was looking to build on a piece of land that had no existing utilities or capacity. The developer put up 80 percent for the construction of the plant and the connections, which entitled him to 50 percent of the flow and enabled him to develop his land. The plant is owned, operated, and maintained by Anne Arundel County.

According to Mike Bongiovanni, company president, the job was similar to other jobs, except the checks came from the developer rather than the county. The project was competitively bid, and the company had a contract with the county and was held to county regulations. Bongiovanni states that the only real difference was that the developer was more involved in the planning and scheduling of the project.

The partnership worked out well for both sides. The developer benefitted because he was able to develop the land much quicker than if he had waited for the county to update or rebuild the treatment plant. The county profited from top-quality, state-of-the-art construction at a lower cost and in a shorter time and by meeting its environmental compliance needs and enhancing community growth. The county got a treatment plant for 20 cents on the dollar. Despite the rosy outcome of the project, Bongiovanni believes that legislative and regulatory changes are needed because few developers can provide adequate front-end capital or have access to that type of financing.

Operation and Maintenance Contracts

According to the EPA, there are now several hundred cases where private companies operate and maintain publicly owned treatment facilities around the country. This is up from around 100 in the late 1980s. States and municipalities, faced with escalating treatment needs but limited by fiscal realities, turn to private companies that can get the job done more efficiently. Competition-toughened private companies can provide innovative methods and equipment, more relevant experience, and access to bulk prices for chemicals and supplies. In some cases, private companies take over existing facilities, and in others, they design, build, and run the systems. My own company PFK-Mark III has completed a job like this.

In 1988, Howell Township, N.J., contracted with us to design, build, and operate a 3.3 million gallon-per-day water treatment plant. To protect the area's groundwater supply, the state required the town to purchase water from a nearby reservoir. Howell Township, looking to maintain control of its water supply, decided to build a treatment plant rather than purchase treated water.

Given the time constraints involved, the town's engineers determined that contracting the work to a private firm was the most sensible course. The contract was awarded to us for the fixed price of $11.8 million, which covered all costs including design, permits, construction, and three years of plant operation. The plant went into full operation on July 1, 1990 (right on schedule) and has been operating successfully ever since.

The advantages for Howell Township were numerous. First, they received a very low price and a fast project. Other treatment plants built in the area with similar size and capacity cost 25 percent more. Second, the partnership continues to save the town money even though our operation and maintenance contract has expired. Because our company paid labor costs for three years, we looked for--and found--a more efficient solution. We designed the plant to be manned by two employees working one eight-hour shift. During the other sixteen hours, the plant is fully automated. The town wouldn't have chosen this design because they have civil servants to man the plant around the clock. Third, to minimize operating costs, chemical conditioning at the plant is adjusted automatically using sensors and a fully computerized control system.

We agreed to a fixed fee for three years of plant operation because we were confident in our ability to control costs through preventive maintenance. The typical municipality fixes things when they break and doesn't emphasize preventive maintenance.

The across-the-board success of our experience with the Howell Township project is not an isolated case. The Reason Foundation, a privatization research and advocacy organization based in Los Angeles, Calif., suggests that competition enables private firms to do this work at lower costs--anywhere from 10 to 50 percent lower. Private contractors also save money because they can buy in bulk and bring in the most up-to-date methods and machines.

Private Ownership

The least common public-private partnership is private ownership of water and wastewater facilities. The broadest and most encompassing form of privatization, private ownership generally entails private sector planning, design, construction, and ownership of the facilities, though in some cases, existing facilities are sold. By selling assets such as water treatment plants, states and cities reap a significant one-time windfall, put valuable properties onto the local tax rolls, and begin collecting income taxes from the private entities. They also benefit from more efficient construction and operation, as well as the increased ability to finance the cost of upgrading facilities and meeting state and federal clean water regulations.

In 1983, Auburn, Ala., needed a $32.6-million wastewater project, of which federal funding would have covered 33 percent. After extensive analysis of the various options, the city contracted a private firm to fully privatize its wastewater treatment plants. Auburn's City Manager Doug Watson told us that the city selected the privatization option primarily for economic reasons. Even though federal grant money was available, Auburn would have incurred $25 million in costs over the life of the project because of the need to cover the local share, the high issuance costs, and future capacity not eligible for grant funding. Auburn did not have to spend the $25 million because the privatizer provided the capital.

Conclusion

Implementation of the executive orders will open the door to more privatization ventures in the near future. Still, even after regulatory impediments are lowered, many issues will have to be resolved on a case-by-case basis. Governments will have to become more comfortable with the contractual terms, private companies will have to believe that the political and legal protections built into the contracts will work, and financing, risks, and benefits will have to be allocated among the parties. Public employee unions and wary citizens groups will have to be appeased, as will elected officials and public servants worried about losing some of their authority.

Finally, I want to thank the Subcommittee for its work in the area of infrastructure financing and for providing our organization an opportunity to participate in the search for solutions. We also commend Dr. Kenneth Rubin of Apogee Research, Inc., one of the principle authors of *America's Environmental Infrastructure: A Water and Wastewater Investment Study*, for his continued contributions in developing the clean water trust-fund concept.

APPENDIX A. Reprinted from "America's Environmental Infrastructure: A Water and Wastewater Investment Study"

CHAPTER IV
POLICIES TO ADDRESS ESTIMATED NEEDS

The preceding chapters presented estimates of future expenditures needed to meet drinking water and wastewater treatment quality standards. They also presented evidence that it is important not only for the health of the nation to meet those standards but also important to economic productivity. However, it is not clear that state governments, local governments, and the public facilities themselves will be able to muster the funds necessary to sustain these levels of expenditure.

In a number of states, capital needs might be met if expenditures continue to grow in the future as they have in the past. Such rates of growth, however, are dependent upon conditions that may no longer prevail. In most states, projected expenditures for capital investment will not be sufficient to meet anticipated needs, particularly if replacement is as substantial as we estimated. Thus, future needs may need to be addressed with new policies — "business-as-usual" may not suffice, particularly in light of the shrinking federal role. This chapter describes two policies to help individual facilities fund the investments needed for fully adequate drinking water and wastewater treatment:

- Extension of the Title II and Title VI Programs of the Clean Water Act and
- Creation of a national Drinking Water and Wastewater Investment Trust Fund.

Extension of the Clean Water Act Title VI programs would increase grants to state revolving funds (SRFs) for investment loans to individual publicly-owned facilities. Reauthorization of the Title II Program would provide grants directly to facilities unable to participate in the Title VI loan program, using need-based criteria to select recipients.

Creation of a national Drinking Water and Wastewater Investment Trust Fund would complement programs under the Clean Water Act. First, a trust would be less vulnerable to deficit-reduction measures. Second, it would include drinking water investments which are not now included in Title II and Title VI programs. Analogous to the Highway Trust Fund, the revenues for this fund would come from additional user fees based on gallons of water consumed and/or wastewater discharged.

Appendix C describes two additional options to increase capital available to drinking water and wastewater treatment through greater private equity participation and improved access to debt markets: more flexibility for Clean Water Act program-funded facilities, and broadened federal criteria for tax-exempt financing.

INTRODUCTION

The nation is faced with a significant increase in funds needed for capital replacement of aging facilities and new capital to satisfy an increased population and compliance with higher quality standards. Some systems are faced with high capital costs to address fundamental problems. For example, the cost of a permanent solution to the problem of combined sewer overflows in Michigan (16-20 billion gallons of contaminated wastewater overflow annually) is estimated as $3 billion or more.[11] In addition, operations and maintenance expenditures must continue to grow as the population served and capital stock grow.

Projections of past trends indicate that, in many states, future capital expenditures could be sufficient to cover needs. In a great number of states, capital needs will not be covered by projected expenditures even if replacement needs are conservatively estimated. Moreover, the capital expenditure levels that were projected depend upon continued intergovernmental transfers and subsidies, as well as deferring some costs to future generations through bonded debt. Even if subsidies, inter-governmental transfers, and new debt cover the costs of maintaining current quality — and this is by no means a certainty — there is still an increment of expenditure required to ensure full compliance with current standards and to meet higher quality standards that may be unfunded.

Historically, water supply and wastewater facilities have been financed by a mixture of taxes, fees, and borrowings. Much of past capital spending has been financed with debt, and this may well have had an impact on the credit-worthiness of any given public authority, perhaps limiting future borrowing capacity.

For example, long term debt directly attributable to water supply utilities amounted to $39.3 billion at the end of 1988. Interest payments in the amount of $2.5 billion were paid on that debt over the course of that year. (There are no comparable data on debt available for wastewater treatment facilities.) There can be no assurance that new lending will be forthcoming to utilities already burdened with significant debt. In any case, borrowings are not a final source of financing; they merely bridge the gap between cash disbursements and the eventual collection of taxes and fees.

Water supply utilities do have revenues that help finance their operations to a large extent. In 1988, the utilities collected $15.3 billion in fees and other revenues. However, their total expenditures of $18.9 billion led to a shortfall of $3.5 billion. Over the period 1993-2000, revenues are projected to total $144 billion (see Appendix B), enough to cover water supply O&M of $110 billion, but insufficient to finance the aggregated capital needs of $49 billion or to service the interest and amortisation on existing and new debt summed for the eight years of the period. While data on wastewater treatment revenues and outstanding debt are unavailable, it is likely that much the same story prevails.

Paying for the capital projects needed to ensure safe drinking water and water quality requires popular and political commitment of financial resources. Ultimately, water consumers and

wastewater generators — individual households, businesses, commercial establishments, and factories — have to pay for the services provided.

This paper focuses on two options that could address capital shortfalls: (1) reauthorize the EPA grant programs for investment in wastewater treatment and (2) create a drinking water and wastewater investment trust fund. These depend on active federal involvement in revenue collection and disbursement and, perhaps, in selection of participating facilities. An additional two options, dependent only upon passive federal government involvement in stimulating investment, would improve facility access to funding from private equity and debt: (3) establish more flexible federal guidelines for equity and debt financing of EPA program-funded facilities and (4) broaden the criteria for tax-exempt bonding. These options, discussed in Appendix C, would increase the capital funds available and/or reduce the cost of debt and would be complementary to the two options described in this chapter.

OPTION #1: Extend Title II and Title VI Programs of the Clean Water Act

Traditionally, justification for federal involvement in water quality is based on the interstate nature of water resources, public concern for health and welfare, and the desire to mitigate fiscal disparities among states and localities required to comply with federal standards. The situation has not changed from the time when Congress first argued for federal interest in what had historically been state and local water quality programs.

The federal financial role in wastewater capital investment under the Clean Water Act is scheduled to come to an end in 1994 with a final $0.6 billion authorization for the SRF program. Under the program, total authorization for construction grants direct to localities (Title II) through 1990 was $9.6 billion; total authorization for grants to fund SRF loan programs will have totalled $8.4 billion. Data in this study indicate that the financial shortfall will not terminate in 1994 but will continue to grow. This would justify extending both elements of federal support — grants to extend SRF loan programs (Title VI) and grants direct to localities (Title II) unable to qualify for loans from SRFs.

Federal financial support for wastewater treatment began in 1956 with the passage of the Federal Water Pollution Control Act (known, with its subsequent amendments, as the Clean Water Act or CWA). Initial authorization was $50 million a year in federal grants to underwrite 30 percent of the capital investment treatment facilities. Periodic amendments raised the authorization ceilings so that, by 1971, $1.25 billion per year was authorized.

There was a shift in 1972 to more aggressive pursuit of "fishable and swimmable" waters. Congress required installation of secondary and, if necessary, more advanced levels of treatment to achieve these objectives. Financial support was evidenced in a construction grant program of $18 million through 1976 and an increase in the federal share to 75 percent. To encourage local consideration of innovative technologies, the federal share of investment in such projects was raised to 85 percent in 1977.

The 1981 amendments to the CWA suffered from mounting budgetary pressures; the authorization ceiling for construction grants was reduced to $2.4 billion annually and, beginning in 1984, the federal share was reduced to 55 percent for conventional technologies and 75 percent for innovative ones. Additionally, these grants were confined to satisfying the needs of the current population with no accommodation for growth.

The construction grant program has contracted even further — from $2.4 billion in 1988 to $1.2 billion each year in 1989 and 1990 when it terminates. At the same time, the SRF program established by the 1987 CWA amendments begins with authorizations of $1.2 billion in 1989, rises to a peak of $2.4 in 1991 (compensating for the end in construction grants) and drops steadily to the last authorization of $0.6 billion in 1994 (see Table 6). Actual appropriations have been even lower.

Table 6: Annual Federal Authorizations for Wastewater Treatment Investment

$ billions

				Fiscal Year					
Program	1986	1987	1988	1989	1990	1991	1992	1993	1994
Construction Grants	2.4	2.4	2.4	1.2	1.2				
SRFs				1.2	1.2	2.4	1.8	1.2	0.6
Total	2.4	2.4	2.4	2.4	2.4	2.4	1.8	1.2	0.6

Although federal support for state revolving funds is recent, SRFs are not new. For example, the Texas fund was begun in 1952 and Ohio's in 1968. By 1987, sixteen states were operating SRFs and another 19 were establishing funds. The federal program will boost these initiatives by granting up to 80 percent of the capitalization for individual state funds. All 50 states and Puerto Rico have EPA-approved SRFs.

SRF terms and financing vary from state to state but, in general, the resources available fall short of estimated needs. For example, West Virginia's SRF received $8.9 million initially plus $5 million a year from state sources since 1975 — a total capitalization of $69 by 1987.

The initial capitalization of individual SRFs, and the federal contribution to them, can be leveraged to expand their financial reach. Moreover, their basis can be extended with annual appropriations at the state level, rather than a single fiscal contribution. For example, Washington's SRF has received $20 million a year since 1985. Nonetheless, given the level of

needs either capitalization will have to be significantly increased or SRF resources will have to revolve through several 20 year loan-and-repayment cycles before wastewater investment needs are adequately addressed.

In this context, it seems appropriate to propose extensions to CWA programs for both Title II construction grants and Title VI SRF capitalization grants. A $3 billion authorization over five years would maintain the 1994 level of funding at $0.6 billion annually; however, the authorization should include a portion for direct construction grants as well as SRFs to address the special needs of small lower-income localities. Reauthorization at $2.4 billion a year would maintain earlier funding levels of the program (1986-1991).

Because both Title II and Title VI programs underwrite the same types of investment at the local level, the construction grants program could undermine the SRF program. That is, localities considered candidates for both programs will prefer direct federal grants over state loans because local capital financing needs are less. This overlap can be minimized with guidelines structured to reserve grants for fiscally constrained communities, for example, means tests coupled with a ceiling on community size.

OPTION #2: Establish a Drinking Water and Wastewater Investment Trust Fund

Extension of the Clean Water Act's Title II and Title VI programs, offered as Option 1, could increase the capital available for wastewater treatment. It would, however, address only a fraction of the shortfall anticipated — $3 to $12 billion over five years for a shortfall of approximately $50 billion. Moreover, Option 1 is confined to water quality and wastewater treatment; it does not address the need for investment in drinking water facilities. In addition, like all federal programs in a period of excessive federal deficits, Option 1 is vulnerable under the terms of the Gramm-Rudman-Hollings Act.[12] The trust fund embodied in Option 2 is suggested as a complement to Option 1; it would include funds for drinking water as well as wastewater treatment and it would be more independent of federal budgetary constraints. It would also provide funds sufficient to close the gap between estimated needs and capital expenditures.

A federal trust fund for drinking water and wastewater treatment would tap new sources of revenue for needed investment. Based on the "user pay" principle, this trust would ensure that the amount paid by each customer was related to the burden placed on the system by that customer.

In customary usage, the term "trust fund" refers to money belonging to one party but held and managed by someone else — a trustee, operating as a fiduciary. Government trust funds generally involve user fees or other dedicated sources of revenue collected for specific purposes as specified in enabling legislation. The contributors to such a trust fund do not maintain ownership of the funds; contributors may or may not be the direct recipients of fund

disbursements (for example, the Highway Trust Fund is financed by fuel taxes from vehicle users but distributed to highway departments for expenditure).

Government trust funds differ somewhat from conventional private trust funds. Trustees for private funds cannot unilaterally alter the terms of the trust and must segregate trust assets from trustee assets. Although separate accounting records are maintained and interest may be credited to cash balances, government trust fund money is really commingled with other public funds. Moreover, for federal trusts, Congress sets the initial tax or fee rate and can unilaterally alter tax rates, benefit levels, or other program features.

Constraints

Even though trust funds were created to guarantee that a long-term source of funds will exist independent of political and budgetary forces, Congress has instruments available to control revenues and outlays. These include:

- Tax actions,
- Obligation ceilings,
- Minimum appropriations,
- Anti-deficit amendments,
- Trigger taxes, and
- Gramm-Rudman-Hollings Act.

Tax Actions

Trust funds require regular Congressional renewal of the supporting taxes or fees but because the taxes can be set on multi-year cycles, such action need not occur every year. For example, the Highway Trust Fund and Mass Transit Trust Fund are re-authorized every five years.

Obligation Ceilings

The widespread use of obligation ceilings — annual limits on the level of contracts that federal agencies can automatically sign with state and local agencies — has greatly restricted freedom as have "automatic" budget restrictions such as the Gramm-Rudman-Hollings Act. A forward funding approach would assure a steady stream of dependable revenues over a multi-year period.

Minimum Appropriations

Some trust funds have minimum amounts which can be obligated and appropriated each year. The Hayden-Cartwright Act of 1934 imposed on the Federal government a minimum expenditure level for highway construction. This act is still in effect today and requires a state to contribute 1.5 percent of its annual allotment from the Highway Trust Fund to plan and survey future construction projects.

Anti-Deficit Amendments

Trust funds sometimes have provisions designed to prevent negative cash balances. The Byrd Amendment to the Highway Trust Fund, for example, imposes automatic across-the-board deferrals in authorized spending levels if projections show funds must be borrowed at the end of the year to meet outlays.

Trigger Taxes

In the reauthorization of some trust funds, Congress has implemented new provisions so that when defined spending conditions are not met there will be a reduction in the tax rate. With this provision in the Airport and Airway Trust Fund, restraints on capital spending for aviation programs becomes counterproductive since the Trust Fund would lose more revenue from the reduction in taxes than it would if all the funds appropriated for capital expansion were spent. The Airport and Airway Trust Fund trigger tax has backfired because the tax committees proposed to reverse the legislation and diverted some funds to the general revenue account. This legislation is still before Congress.

Gramm-Rudman-Hollings

Under the terms of the Gramm-Rudman-Hollings Act, Congress has exempted the program benefits, but not the administrative expenses, of most social insurance and retirement entitlements from sequestration (reduction of budgetary resources). For example, Social Security benefit payments are exempt, but the administrative costs for paying those benefits are subject to sequestration, as are similar costs to administer all other trust funds. Trust fund accounts not listed in the act as exempt (most are not exempt) are subject to sequestration, but they do not lose their budget authority. The amount sequestered reverts back to the fund balance and is available in subsequent years. This is similar to the treatment of special funds, but contrasts with general fund accounts, where the sequestered amounts are permanently withdrawn.

Budget Status

Since Congress adopted a unified budget, revenues from both federal funds and trust funds have been commingled.[13] One result has been that trust fund surpluses could now be used to finance and mask several billion dollars in the federal deficit. This, in turn, has given Congress

an incentive to restrict trust fund outlays, undermining the link between user-based receipts and expenditures. As trust funds have a steady stream of dedicated tax receipts, Congressional budgeting actions have created trust fund surpluses. Trust fund receipts for 1990 are estimated at $559 billion, with outlays planned at $411 billion. Similar operating surpluses from prior years has resulted in a current balance in federal trust funds of approximately $550 billion.

On-budget accounts — both trust funds and federal funds — are included in the unified budget; the federal budget is affected by any changes in their cash balances. Off-budget accounts, for example the Federal Old-Age and Survivors Insurance Trust Fund and the Federal Disability Insurance Trust Fund, are not included in the unified budget but nonetheless are used to calculate the balance in the federal budget deficit and Gramm-Rudman-Hollings.

In addition to these accounts, there are truly off-budget accounts that are financially independent, publicly chartered corporations, within the executive branch. They are governed by a board of directors appointed by the president, confirmed by the Senate. Corporation accounts are completely outside the federal budget process, therefore unaffected by annual budget milestones or Gramm-Rudman-Hollings. Truly off-budget corporations include:

- Federal National Mortgage Association (Fannie Mae);
- Federal Home Loan Mortgage Corporation (Freddie Mac);
- Student Loan Marketing Association (Sallie Mae); and
- U.S. Postal Service.

The proposed water and sewer trust fund could be structured as conventional trust fund, either nominally on- or off-budget but nonetheless commingled with federal funds and included in deficit computations, or could be structured as a public corporation. A public corporation would have greater latitude in allocating funds from revenues and would not be subject to deficit-support restrictions on disbursements. However, it would be politically more difficult to establish since Congress would retain less control over policy and financial operation.

Trust Fund Disbursement

A water-sewer trust fund would receive user fees collected by facilities from consumers and would disburse monies for investment in new and established facilities. Disbursement can be structured to consider:

- Balance between grants and loans;
- Geographical balance; and
- Facility ownership.

Balance Between Grants and Loans

The trust fund will receive revenues each year that the incremental fees are in effect. This money can be distributed as grants that permanently deplete the reserves or as loans which "revolve" and return to the capital base in the future. For example, the trust revenues could be tied into the existing SRF programs and broadened to include loans for drinking water as well as wastewater treatment.

Because there is a burden associated with loans, they encourage greater efficiency in resource use. However, fiscally troubled communities may be ineligible for loans — for example, because they cannot afford the interest burden or because they cannot come up with any local match that may be required. In these case, grants may be necessary to assure proper drinking water and wastewater management. The trust fund does not have to be confined to either grants or loans; a combination of both is feasible. A predetermined portion of each year's revenues from user fees or interest payments could be set aside for grants to communities satisfying specific criteria.

Geographical Balance

Trust fund revenues can be collected at the local level and invested directly by each municipality to fund its own water quality investment. However, this parochialism ignores the interdependence of water services. Because actions in one location affect water quality at other locations, a shortage of investment funds in one area has implications for water quality in other downstream or adjacent areas. This argues for a "user pay" system that pools revenues from larger geographical areas and disburses them in accordance with need.

However, users prefer to pay for facilities close to home; this argues for less redistribution and a closer geographical tie between revenue and expenditure. There are several models for trust fund responsibility in selecting investment projects; these vary in their movement away from more narrow state perspectives to a truly national perspective:

- Trust fund disbursements are determined geographically, that is, disbursements to each state must be in the same proportion as receipts from that state. Given these limits,
  - The trust fund acts only as a conduit or collection agent — that is, fees are collected from each facility and returned to each state for project selection and disbursement;
  - The trust fund acts as (50) state-specific investment bankers — that is, the trust screens and selects individual facility projects on a state-by-state basis until the state funding limit is reached.

- Trust fund acts as a single national investment banker, accepting or rejecting facility or state project applications without precise regard for geographic sources of revenue.

From an economic point of view, complete geographic flexibility would be most efficient in achieving improved water quality. This might not be politically feasible, however. The financial link between consumption and impact is stretched as geographical ties are weakened and the user fee begins to seem more like a general tax. Voters and congressional delegates from each state are more likely to support creation of a trust fund that promises significant returns to their area.

A compromise between strict geographical quotas and complete flexibility can be crafted. For example, disbursements from the Highway Trust Fund are distributed to the states based on a series of formulas — some based on the estimated cost to complete projects (parts of the interstate system) and others based on measures of demand for highway services (e.g., areas of the state, population). There is, however, an annual ceiling on inter-state subsidization of 15 percent. That is, states are guaranteed to receive grants equal to at least 85 percent of its total payments to fund.

Facility Ownership

A national trust fund for drinking water and wastewater facility investment would permit some redistribution of funds within and among states according to capital need. In the past, federally-sponsored programs have been restricted to publicly-owned facilities. Moreover, in practice, public ownership has been interpreted to mean no private equity participation. The question remains whether or not public-private partnerships and privately-owned facilities should be eligible for loans and grants under this proposed trust fund.

If public-private partnerships are ineligible for trust fund programs, public facilities may refuse private participation in order to retain their eligibility for trust support. In the long run, this may increase financial needs by cutting off access to the additional capital and expertise associated with private participation (see Appendix C for a more detailed discussion of federal program constraints to private participation and proposed mitigation of these restrictions).

Extending trust fund eligibility to facilities with private equity participation poses other questions. Should public-private facilities be allowed the same conditions and privileges as publicly owned facilities — for example, subsidized interest rates? If private facilities are not included in the trust fund program, should customers of private facilities be assessed at the same rate as customers of publicly-owned facilities? Should they be assessed at all if disbursements are confined to publicly-owned treatment facilities and not extended to programs that affect all residents, for example, nonpoint source pollution programs? These issues would have to be resolved as part of the program structure.

Potential Revenue of a National Water-Sewer Trust Fund

A federally-administered trust fund could be based on several different fees, including one-time fees such as permits and hook-up fees or recurring bases such as a user fee on gallons used. Permit and hook-up fees assess the incremental users that put additional burdens on the drinking water and wastewater systems. These are therefore most appropriate for new construction to meet expanded demand.

Taxes and fees based on volume assess the current customers; new users are assessed as they come on line. Logically, these revenues are appropriate for system renovation and upgrading to meet higher quality standards since these investments benefit all customers, not just new ones. Separate fees could be levied on drinking water and wastewater discharges. In the absence of separate discharge meters, sewerage charges for residential and most commercial customers would be based on water intake. However, industrial discharges can be estimated and charged independently of water intake, particularly for those customers drawing water directly from ground and surface sources rather than from the public system but discharging to the public system.

Using data from the US Geological Survey,[14] total public-service water withdrawals in 1985 was approximately 36,152 MGD (million gallons per day) or in excess of 13 billion gallons per year. A special trust fund fee of five cents per 1,000 gallons of water withdrawn would generate over $650 million for the trust at 1985 consumption levels.

Assuming a modest annual compound growth rate of 1.5 percent in water withdrawals,[15] approximately 125 thousand billion gallons of drinking water will be withdrawn during the period 1993-2000. A trust fund fee of $0.05 per 1000 gallons would generate over $6.2 billion during the eight year period for the trusts. Table 7 indicates the revenues that could be forthcoming from each state during the eight year period, assuming the same 1.5 percent growth each year in withdrawals.

Increasing the trust fund fee to $0.14 per 1000 gallons of drinking water withdrawals would generate over $17 billion in trust fund revenues during the 1993-2000 period; this would be sufficient to meet drinking water capital needs not met by projected expenditures during the period (see data presented in Chapter III). A fee of this magnitude would mean an increase in average annual fees of $5.37 to $7.15 per capita for daily consumption respectively of 105 to 140 gallons.[16] The annual increase in household costs for the statistically average household of 2.5 persons would be $13.41 to $17.89, a proportional increase of 8-11 percent at 1987 average rates.[17]

Revenues could shift in response to several factors. First, in response to public concern over resource shortages, there could be a general move to conservation. There is no way to estimate the extent of future conservation and its impact on demand.

Table 7: Potential Trust Fund Revenues from Drinking Water Tax

	1985 Withdrwl MGD*	Projected Withdrwls, Total 1993-2000 Billion Gal	POTENTIAL TRUST FUND REVENUES $ Millions Total 1993-2000 Fee per 1000 gallons withdrwn $0.05	$0.10	$0.14
UNITED STATES	36152	125357	6268	12536	17550
Alabama	615	2133	107	213	299
Alaska	76	264	13	26	37
Arizona	618	2143	107	214	300
Arkansas	257	891	45	89	125
California	5310	18412	921	1841	2578
Colorado	737	2556	128	256	358
Connecticut	362	1255	63	126	176
Delaware	77	267	13	27	37
D.C.	218	756	38	76	106
Florida	1680	5825	291	583	816
Georgia	836	2899	145	290	406
Hawaii	204	707	35	71	99
Idaho	212	735	37	74	103
Illinois	1780	6172	309	617	864
Indiana	575	1994	100	199	279
Iowa	350	1214	61	121	170
Kansas	316	1096	55	110	153
Kentucky	404	1401	70	140	196
Louisiana	629	2181	109	218	305
Maine	108	374	19	37	52
Maryland	771	2673	134	267	374
Massachusetts	767	2660	133	266	372
Michigan	1250	4334	217	433	607
Minnesota	473	1640	82	164	230
Mississippi	312	1082	54	108	151
Missouri	645	2237	112	224	313
Montana	158	548	27	55	77
Nebraska	248	860	43	86	120
Nevada	288	999	50	100	140
New Hampshire	89	309	15	31	43
New Jersey	1050	3641	182	364	510
Mew Mexico	226	784	39	78	110
New York	2860	9917	496	992	1388
North Carolina	595	2063	103	206	289
North Dakota	69	239	12	24	33
Ohio	1420	4924	246	492	689
Oklahoma	521	1807	90	181	253
Oregon	416	1442	72	144	202
Pennsylvania	1600	5548	277	555	777
Rhode Island	116	402	20	40	56
South Carolina	359	1245	62	124	174
South Dakota	80	277	14	28	39
Tennessee	627	2174	109	217	304
Texas	2990	10368	518	1037	1451
Utah	447	1550	77	155	217
Vermont	53	184	9	18	26
Virginia	579	2008	100	201	281
Washington	955	3311	166	331	464
West Virginia	151	524	26	52	73
Wisconsin	575	1994	100	199	279
Wyoming	98	340	17	34	48

* Source Wayne B. Solley, Charles F. Merk, and Robert R. Pierce, *Estimated Use of Water in the United States 1985*, U.S. Geological Survey Circular 1004, USGPO 1988, Table 2.

1985 Water Withdrawals are Million Gallons/Day (MGD) from ground and surface water, public-supply fresh water use. Difference between withdrawals, shown here, and water delivernes is public use (fire-fighting, municipal parks etc.) and losses; these amounted to 4040 MGD in 1985. Projections are based on an assumed compound growth in withdrawals of 1.5 percent per annum

The second factor that could constrain demand growth is reaction to the user fee itself. Although individual households are only slightly responsive to small changes in costs for drinking water and wastewater services, industrial and commercial consumers may be more sensitive to price and act to reduce their demand. Overall, commercial and industrial users each accounted for nearly 16 percent of public-supply deliveries in 1985.[18]

The long run price elasticity of demand (the measure of sensitivity to price changes) for water has been estimated as between 0.5 and 0.8 for industrial users.[19] That is, a ten percent increase in price would lead to a drop in demand of 8 percent or less. Thus, a $0.11 increase added to a basic user cost of $1.10 per 1000 gallons of water (excluding wastewater discharges) could lead to a maximum shift downward in industrial demand of approximately 8 percent. Based on the 1985 industrial share of total withdrawals, this would erode the anticipated trust revenues by approximately $177 million for the 1993-2000 period.

Another source of revenues is fees on self-supply withdrawals of water. Although many individual consumers supply themselves directly from private wells without utilizing public treatment facilities, they nonetheless can affect public water supplies. For example, private well users can affect the water table and the costs of public system withdrawals in adjacent areas drawing from the same aquifer. A trust fund fee on such users, however, would be politically unpopular in rural areas and might stymie establishment of the trust. In any case, the fee should be less than for public system customers since self-suppliers will not directly benefit from trust disbursements for capital improvement. In 1985, approximately 15 percent of the US population had private wells. Assuming their use per capita was about the same as for public-supply domestic users, a user fee of $0.03 per 1000 gallons would generate about $41 million a year.[20]

Separate trust fund fees could be assessed for wastewater treatment capital. These could be based on presumed discharges for residential and commercial units — that is, drinking water withdrawals. For industrial establishments, the fee could be based on engineering estimates of discharges or direct monitoring.

Table 8 presents the estimated revenues generated by such a fee, assuming a 1.5 compound annual growth rate in discharges. A minimal fee of $0.05 per 1000 gallons released would generate $5.3 billion for the trust fund over the eight year period 1993-2000. This would be sufficient to address the capital shortfall only if replacement of aging infrastructure were ignored. A fee of $0.20 per 1000 gallons would yield $22.2 billion during the period — enough to address a significant portion of the capital shortfall including replacement needs. That is, a fee of $0.20 per 1000 gallons would cover the shortfall in new capital as estimated by the EPA plus approximately one third of replacing all capital 20 years old or older. A trust fund fee of $0.35 per 1000 gallons released would meet new capital needs plus modest replacement needs, that is, replacing over a third of the $59 billion turning 20 years old during the period. A greater proportion of needs could be met by leveraging trust fund revenues.

A trust fund fee on wastewater releases of $0.35 per 1000 gallons would increase annual household expenditures on sewerage by $13.41 to $17.89 per year per capita, assuming it was

Table 8: Potential Trust Fund Revenues from Wastewater Tax

	1985 Public Releases MGD*	Projected Releases, Total 1993-2000 Billion Gal	POTENTIAL TRUST FUND REVENUES, $ Millions, Total 1993-2000 Fee Per 1000 gallons released $0.05	$0.20	$0.35
UNITED STATES	30614	106154	5308	21231	37154
Alabama	320	1110	55	222	388
Alaska	51	177	9	35	62
Arizona	125	433	22	87	152
Arkansas	287	995	50	199	348
California	2770	9605	480	1921	3362
Colorado	336	1165	58	233	408
Connecticut	371	1286	64	257	450
Delaware	86	298	15	60	104
D.C.	280	971	49	194	340
Florida	1120	3884	194	777	1359
Georgia	485	1682	84	336	589
Hawaii	139	482	24	96	169
Idaho	140	485	24	97	170
Illinois	2160	7490	374	1498	2621
Indiana	717	2486	124	497	870
Iowa	313	1085	54	217	380
Kansas	247	856	43	171	300
Kentucky	220	763	38	153	267
Louisiana	488	1692	85	338	592
Maine	103	357	18	71	125
Maryland	482	1671	84	334	585
Massachusetts	834	2892	145	578	1012
Michigan	1610	5583	279	1117	1954
Minnesota	454	1574	79	315	551
Mississippi	196	680	34	136	238
Missouri	885	3069	153	614	1074
Montana	202	700	35	140	245
Nebraska	170	589	29	118	206
Nevada	129	447	22	89	157
New Hampshire	252	874	44	175	306
New Jersey	1330	4612	231	922	1614
New Mexico	82	284	14	57	100
New York	3070	10645	532	2129	3726
North Carolina	481	1668	83	334	584
North Dakota	29	101	5	20	35
Ohio	146	506	25	101	177
Oklahoma	287	995	50	199	348
Oregon	336	1165	58	233	408
Pennsylvania	1690	5860	293	1172	2051
Rhode Island	113	392	20	78	137
South Carolina	270	936	47	187	328
South Dakota	48	166	8	33	58
Tennessee	536	1859	93	372	651
Texas	1680	5825	291	1165	2039
Utah	341	1182	59	236	414
Vermont	80	277	14	55	97
Virginia	551	1911	96	382	669
Washington	436	1512	76	302	529
West Virginia	233	808	40	162	283
Wisconsin	2860	9917	496	1983	3471
Wyoming	43	149	7	30	52

* Source: Wayne B. Solley, Charles F. Merk, and Robert R. Pierce, *Estimated Use of Water in the United States 1985*, U.S. Geological Survey Circular 1004, USGPO 1988, Table 22.

1985 Wastewater Releases are total public releases, Million Gallons/Day (MGD). Wastewater releases were assumed to grow at 1.5 percent compound annual rate; this is slightly below the historical 1980-1985 rate for drinking water.

based on drinking water withdrawals averaging 105 to 140 gallons per day respectively. For the typical 2.5 person household, the annual trust fund fee of $33.53 to $44.71 would mean an increase in sewerage fees of 20 to 27 percent (based on average 1987 user charges).[21]

CONCLUSION

The most appropriate combination of policies to address the anticipated shortfall in capital for drinking water and wastewater treatment is a function not only of the financial power of each but also the political and social impacts associated with each option. Particular attention should be paid to the special problems of smaller, poorer communities that might be unable to muster the matching funds required by federal programs or to increase bonded debt at reasonable interest rates. The level of fees set for a national trust fund must also be sensitive to the fact that residents of smaller communities are already paying higher water and sewer rates on the average. This argues for at least a partial sharing of the capital burden among the population as a whole through federal allocations based on income taxes, i.e., out of general revenues through an extension of the Title II and VI programs. The external effects or spillover effects, particularly of wastewater treatment, also argue for some general sharing rather than a strict user-pay basis for financing capital improvements. Nonetheless, a trust fund based on a modest increase in annual household costs for drinking water and sewerage clearly is the most important option financially. In this period of federal budgetary stringency, it also may be the only viable and stable option.

APPENDIX B.

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EPA

Privatization Of Public Facilities: Panacea Or Pipe Dream?

By Michael Ancell, Staff Editor, The National Utility Contractor

Reprinted with permission from the March, 1993 issue of The National Utility Contractor, published by the National Utility Contractors Association, "NUCA." NUCA is an Arlington, Virginia based association of nearly 2,000 contractors and suppliers who build, maintain, and supply materials for sewer, water, and gas underground utility systems throughout the United States.

To some, the privatization of public water and wastewater facilities represents an elixir to the nation's budgetary and environmental ills. They envision battle-hardened private companies, with white hats, riding in to save towns being held hostage by burgeoning pollution problems and government regulations. But others see a darker, more ominous picture. They fear that privatization strips valuable assets from the public domain, erodes accountability for vital services, and costs hard-working people their jobs. In reality, both sides miss the mark. The privatization of water and wastewater facilities, though not a panacea, provides a viable alternative for financially strapped states and local governments to address their environmental needs.

Simply, privatization entails a public-private partnership created to efficiently deliver services that are traditionally supplied by a public entity. The nature of these partnerships varies widely, as do the techniques and activities that they encompass. This article explores the basic types of privatization partnerships; the many issues and impediments to be resolved; the benefits and drawbacks for municipalities, contractors, and other private parties; and the past and future of privatized water and wastewater facilities.

A Brief History

Privatization in the United States dates back to the nineteenth century, when privately owned and operated toll roads and bridges were common. But privatization of water and wastewater systems received little attention until the late 1970s when private investment in infrastructure was enhanced by changes in the federal tax code. Increased private-sector access to tax-exempt debt and tax-deductible interest payments on that debt substantially reduced borrowing costs. Private involvement was further buoyed in the early 1980s by the pro-market strategies of the Reagan administration.

Privatization momentum was stalled in 1986 by tax reform legislation that discontinued the investment tax credit and reestablished longer depreciation schedules on most infrastructure. The reduced tax incentives significantly decreased private interest in owning public facilities.

Looking to rekindle interest in privatization and bolster the economy, the president issued an executive order last April that removed many regulatory impediments and encouraged state and local governments to sell or lease infrastructure assets obtained with federal assistance. The president ordered the EPA to issue policy guidance to permit increased private participation in wastewater treatment facilities as well as the privatization of existing plants. Citing tremendous environmental needs, the president sought to help local governments fund

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facilities critical to economic development and clean water.

"Private enterprise and competitively driven improvements are the foundation of our nation's economy and economic growth," the president stated in the order. "Federal financing of infrastructure assets should not act as a barrier to the achievement of economic efficiencies through additional private market financing or competitive practices, or both."

Types Of Privatization

Privatization partnerships vary greatly, but in the water/wastewater field, they can generally be divided into three categories: design and construction, operation and maintenance, and ownership.

Private design and construction of treatment plants and collection and delivery systems are commonplace in the U.S. The typical scenario includes a private developer with a parcel of land to develop and a municipality that lacks the money or the incentive to provide the necessary clean water support. Financing and risk are allocated in contract negotiations and are generally shared to varying degrees.

Basically Business As Usual

M.A. Bongiovanni, Inc., a NUCA contractor based in Syracuse, N.Y., was part of such a relationship in 1989 when it built a new sewage treatment plant to replace a small, outdated one in Maryland City, Md. A large Washington, D.C.-area developer was looking to build on a piece of land that had no existing utilities or capacity. The developer put up 80 percent for the construction of the plant and the connections, which entitled him to 50 percent of the flow and enabled him to develop his land. The plant is owned, operated, and maintained by Anne Arundel County.

According to Mike Bongiovanni, company president, the job was similar to other jobs, except the checks came from the developer rather than the county. The project was competitively bid, and the company had a contract with the county and was held to county regulations. "For us, it was pretty much a normal deal," Bongiovanni said. "The only real difference was that the developer was more involved in the planning and scheduling of the project."

Michael Deane, of the EPA's Alternative Financing Section, agrees that this type of privatization has little impact on contractors. "Our feeling is that the contractor will be just as happy working for Company X as opposed to Community Y," he said. "Working for a private company might be better because they can usually bring you on board more quickly and process change orders faster."

The partnership worked out well for both sides. The developer benefitted because he was able to develop the land much quicker than if he had waited for the county to update or rebuild the treatment plant. The county profited from top-quality, state-of-the-art construction at a lower cost and in a shorter time and by meeting its environmental compliance needs and enhancing community growth. "I don't see any drawbacks for the county," Bongiovanni said. "They got a treatment plant for 20 cents on the dollar."

Despite the rosy outcome of the project, Bongiovanni doesn't foresee a great rush of similar jobs without legislative and regulatory changes. "You aren't going to find many developers with that much front-end capital or with access to that type of financing," he said.

Operation And Maintenance Contracts

According to the EPA, there are currently between 300 and 400 private companies operating and maintaining publicly owned treatment facilities around the country. This is up from around 100 in the late 1980s. States and municipalities, faced with escalating treatment needs but limited by fiscal realities, turn to private companies that can get the job done more efficiently. Competition-toughened private companies can provide innovative methods and equipment, more relevant experience, and access to bulk prices for chemicals and supplies. In some cases, private companies take over existing facilities, and in others, they design, build, and run the systems.

In 1988, Howell Township, N.J., contracted PKF-Mark III, Inc., a NUCA member from Newtown, Pa., to design, build, and operate a 3.3 million gallon-per-day water treatment plant. To protect the area's groundwater supply, the state required the town to purchase water from a nearby reservoir. Howell Township, looking to maintain control of its water supply, decided to build a treatment plant rather than purchase treated water.

Given the time constraints involved, the town's engineers determined that contracting the work to a private firm was the most sensible course. The contract was awarded to PKF-Mark III for the fixed price of $11.8 million, which covered all costs including design, permits, construction, and three years of plant operation. The plant went into full operation on July 1, 1990 (right on schedule) and has been operating successfully ever since.

The advantages for Howell Township were numerous. "We've developed certain capabilities and experience that we used to benefit the community," said Tim Monsul, marketing manager for PKF-Mark III. "They got a very low price and a fast project. Other treatment plants built in the area with similar size and capacity cost 25 percent more."

The partnership will go on saving the town money even after the operation and maintenance contract expires. Because PKF-Mark III would be paying labor costs for three years, Monsul said, "we looked for—and found—a more efficient solution. We designed the plant to be manned by two employees working one eight-hour

shift. During the other 16 hours, the plant is fully automated. The town wouldn't have chosen this design because they have civil servants to man the plant around the clock." To minimize operating costs, chemical conditioning at the plant is adjusted automatically using sensors and a fully computerized control system.

PKF-Mark III agreed to a fixed fee for three years of plant operation because they were confident in their capabilities. "That was a risk," Monsul reported. "But if you keep up with preventive maintenance, you can control costs. The typical municipality fixes things when they break and doesn't emphasize preventive maintenance."

The across-the-board success of the Howell Township project is not an isolated case, according to David Haarmeyer, senior policy analyst for the Reason Foundation, a privatization research and advocacy organization based in Los Angeles, Calif. "Municipalities, especially the small towns, don't have the money or the expertise to meet EPA regulations, so they bring in the private sector," he said. "Competition enables private firms to do this work at lower costs—anywhere from 10 to 50 percent lower. They have more operating experience, and often not just at one facility but at facilities across the state, across the nation, or even internationally. They save money because they can buy in bulk and bring in the most up-to-date methods and machines."

Knowledge Gap Slows Progress

State and federal regulations and municipalities' lack of knowledge about privatization realities are currently impeding the spread of privatized operation and maintenance contracts, according to Haarmeyer. "Not many municipalities are fully aware of these options," he said. "Or they see privatization as a loss of control over what they are doing. They have no incentive to privatize."

Monsul concedes that control is a key issue but reported that Howell Township remained involved with the project throughout. "The municipality loses direct control of the project because they haven't hired the engineer," he said. "But they had an engineer monitoring the entire job, and if he saw any problems, he'd blow the whistle. And the township has no hands-on control of the plant, but one of their representatives was on hand to monitor operations daily during the first year."

Private Ownership

The least common public-private partnership is private ownership of water and wastewater facilities. The broadest and most encompassing form of privatization, private ownership generally entails private sector planning, design, construction, and ownership of the facilities, though, in some cases, existing facilities are sold. By selling assets such as water treatment plants, states and cities reap a significant one-time windfall, put valuable properties onto the local tax rolls, and begin collecting income taxes from the private entities. They also benefit from more efficient construction and operation, as well as the increased ability to finance the cost of upgrading facilities and meeting state and federal clean water regulations.

"Between 1980 and 1986, a dozen or so well-known but smaller projects were sold," Haarmeyer said. "But since the tax incentives were removed (in 1986), there has been no sale of wastewater facilities."

In 1983, Auburn, Ala., needed a $32.6-million wastewater project, of which federal funding would have covered 33 percent. After extensive analysis of the various options, the city contracted a private firm to fully privatize its wastewater treatment plants. "Auburn selected the privatization option for primarily economic reasons," said Doug Watson, Auburn's city manager. "Even though federal grant money was available, Auburn would have incurred $25 million in costs over the life of the project because of the need to cover the local share, the high issuance costs, and future capacity not eligible for grant funding."

Auburn did not have to spend the $25 million because the privatizer provided the capital. Roles, responsibilities, and economic interests of both parties are specified in the contract, which provides for a reasonable return on the privatizer's investment, according to the EPA. "Auburn has been extremely pleased with the service and savings provided by our privatization contract for wastewater treatment services," Watson said.

Change On The Horizon

Since the president's executive order last April, the EPA has been working on a pilot program that assists local privatization initiatives and pinpoints federal regulatory impediments to privatizing assets financed with federal grants. EPA is empowered to facilitate privatization by granting deviations or waivers to grant regulations. "We are trying to form an advisory committee to help us move forward on privatization projects but have been slowed by budget constraints," EPA's Michael Deane said. The committee will include community officials, state regulators, potential investors, unions, and members of the environmental community, and Deane expects the first meeting to be held in March. [EPA Note — committee meetings will begin in mid-1993.]

As part of the pilot project, the EPA and the advisory committee will review three real-world cases: Indianapolis, Indiana; Miami (Ohio) Conservancy District, and Silverton, Oregon. Many private and public entities will be paying particularly close attention to the outcome of the pilot program, and Haarmeyer expects that privatization activity will increase once the results are in.

Indianapolis Explores Options

Indianapolis has undertaken a comprehensive study of the city's wastewater treatment plant operations, financial management, and value. The city is the largest in the country to openly explore full privatization as an approach to financing extensive wastewater treatment improvements. The study will explore ways to tap private sector resources, while at the same time, capitalizing on the city's existing resources to address the water quality infrastructure challenges it faces in the near future. Deane anticipated that a draft of the study would be released by mid-February and ready for review at the advisory committee's first meeting.

"We view Indianapolis' study as a model for how cities should approach the very difficult problem of funding infrastructure and environmental needs," said Alan Fox, associate assistant administrator for water at the EPA when the project was announced in November, 1992. "We look forward to working closely with the city on this pilot project, which will be a benefit to the citizens of Indianapolis and to the country as a whole."

The Miami Conservancy District is looking to sell all or part of its wastewater treatment system, though there will be permitting and other technical aspects to be worked out with EPA, Deane said. Silverton is considering private investment as part of a public-private partnership.

Many Issues to Resolve

Everyone interviewed for this article agreed that the implementation of the executive order will open the door to more privatization ventures in the near future. Still, even after regulatory impediments are lowered, many issues will have to be resolved on a case-by-case basis. Governments will have to become more comfortable with the contractual terms, private companies will have to believe that the political and legal protections built into the contracts will work, and financing, risks, and benefits will have to be allocated among the parties. Public employee unions and wary citizens groups will have to be appeased, as will elected officials and bureaucrats worried about losing some of their authority.

Privatization is not a cure-all remedy, and while several significant hurdles still exist, it is certainly an area worth watching. Privatization represents a huge potential growth area for businesses, including utility contractors, and a possible solution to many of the nation's clean water needs.

For more information about EPA's ***Partners Rebuilding America*** *initiative promoting public-private partnerships in wastewater finance, contact the Alternative Financing Section in the Office of Water at (202) 260-4060.*

Statement of Jane F. Garvey
Deputy Federal Highway Administrator
Federal Highway Administration
Before the
House Public Works and Transportation Committee
Subcommittee on Investigations and Oversight

July 13, 1994

Innovations in Transportation Infrastructure Financing

Introduction

Mr. Chairman, Members of the Committee. I am very pleased to be before this Subcommittee to testify on the timely and important issue of how to maximize infrastructure financing. Secretary Stoll and I, as well as Secretary Peña, Federal Highway Administrator Rodney Slater, and the Department's other modal Administrators are committed to improving our Nation's transportation infrastructure through enhanced and strategic capital investment.

Mr. Chairman, the series of hearings this Subcommittee has held on infrastructure needs, along with proposed legislation such as the Infrastructure Reinvestment Act of 1993, (H.R. 3489) which you introduced last November, point toward two very important facts. First, the Department's analysis shows that we as a Nation are underinvesting in our transportation infrastructure. Second, as leaders, we simply cannot adopt a business as usual approach, assuming the situation will take care of itself. We must look at new tools and new approaches to solve our Nation's infrastructure needs.

The Federal Highway Administration (FHWA) is serving as the lead

agency for the Department's Innovative Financing effort. This morning I will outline what we are doing in the FHWA and address the issues raised by the Subcommittee in its invitation letter.

Secretary Peña asked us to develop an action plan to improve transportation and Departmental program delivery. The number one item in that plan is infrastructure financing. Our first goal was immediate -- get full ISTEA funding in the FY 1995 budget for highway and capital transit programs. I remain hopeful that the Federal-aid limitation reduced in the FY 1995 Appropriations bill (H.R. 4556) will be elevated in future Congressional deliberations to the higher level that the Administration proposed.

The second part of our plan is the Innovative Financing Program. The rationale behind the program is very straight-forward: increase capital investment in transportation infrastructure. Our competitors understand that very well. The Japanese, Taiwanese, and Germans have well financed infrastructure development programs in full swing. We have underinvested in infrastructure and transit (we have more than $300 billion in backlogged bridge and highway needs; about 25 percent of our major highways, or more than 234,000 miles, are in "poor" or "fair" condition) and need to find ways to attract additional capital as one of the means to bridge the gap between infrastructure needs and dedicated funding. The "bottom line" is that as a Nation we are investing between $10 and $20 billion annually less than needed to keep things at their current

performance level.

The FHWA began its work in Innovative Financing by looking at the financial world around us and how it currently works. Of course, we looked first at the landmark Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), which gives the FHWA and the States a greater degree of financial flexibility and has served as the basis of our innovative financing initiative.

We looked at some of the important financial innovations State and local governments are making in modernizing their investment programs and practices. We looked at other Federal legislation and pending bills for concepts and practices which may help finance transportation infrastructure. We also looked to the private sector, to the underwriters, rating agencies, and bond insurers to learn what we could from them.

Further, and perhaps most importantly, we listened to what the public was saying about us, about the ISTEA, and about transportation financing in general. The most frequently raised issue at those ISTEA outreach meetings Secretary Stoll mentioned, was transportation financing. We were told that the funding for transportation simply had to increase; that needs were far outstripping available funds; that our economy and quality of life were beginning to be impacted; and that the ISTEA's flexibility was being undermined by a lack of funds.

The world of finance has evolved to offer some innovations to help solve our problems -- but as a group, highway agencies, may have been reluctant to try them. There is however, an increasing willingness on the part of elected officials, transportation leaders, and others to think in non-traditional ways about highway financing. Just a few years ago, virtually everyone believed that highways could be provided only by the public sector and financed almost exclusively on a "pay-as-you go" basis by gasoline taxes. A change in thinking has come about because of Congressional leadership in shaping the ISTEA, Administration leadership, including an Executive Order on improving infrastructure investment, innovations at the State level, Committee leadership in focusing attention on this issue, several successful innovative projects, and improvements in public and private financing.

Because of increased competition for transportation funding, we need to begin to move from a single payor strategy of exclusive public sector financing of transportation infrastructure to employ a multiple financing strategy of public sector financing and public-private partnership financing to maximize infrastructure investment. The ISTEA has provided multiple financing strategies that may be employed by a State in making transportation financing choices-- we want to assist the States in beginning to employ these strategies.

Candidly, while there has been a change in the way Federal, State,

and local governments and the private sector think about highway financing, there has not yet been an extensive change in the way most of them act. Let me give two examples. First, we have seen only a moderate interest in ISTEA section 1012 toll provisions. Although 16 new toll agreements have been executed under title 23, United States Code, section 129 (ISTEA section 1012), no State has yet made a loan under the loan provisions. Second, only about one-third of the 30 States eligible for section 1044 toll credits have applied for those credits. The complexity and the lack of familiarity with these concepts have challenged the States' ability to use the ISTEA's innovative financing provisions.

The goals of the FHWA Task Force were to de-mystify the ISTEA's financial provisions and "jump-start" innovative financing. We also wanted to make it easier for the States to take advantage of the ISTEA as well as some of the other financial tools that have been developed by other States or by the private sector.

Section 307 of title 23, United States Code, authorizes the Secretary to engage in highway financing research, and test the effects of research in conjunction with our State partners. Under the innovative financing initiative we identified additional actions, including establishing incentives and the removal of existing barriers, to encourage States, private investors, and the financial community to increase investment in transportation.
In addition to tolling issues and matching funds, we identified

highway-related income, bond financing, public/private partnerships, revenues streams, and loans as areas where States may want to consider innovative financing proposals. Our "bottom-line," however, was that the proposals had to show an increase in investment and have research value.

Secretary Peña, Administrator Slater and I, as well as most of our Departmental leadership, have backgrounds in State or local governments. We are well aware that many of the best ideas are developed at the "grass-roots" -- at the State and local levels. With this in mind, in soliciting Innovative Financing proposals from the States, our guidance was intentionally broad with maximum State flexibility to develop the best possible proposals. Our goal is to provide national leadership on innovative financing by creating a record of achievement. We asked the States to identify specific projects, develop a plan of finance, and offer those projects as examples of creative financing solutions. We felt that developing innovative financing models would be the key element of this proactive effort. We hope that once these models are developed and "up and running" that they would provide examples for others to use. The States are anxious to move beyond the discussion stage to real, specific success models that may be employed in the future.

I want to share with you how strong our commitment is to innovative financing. Our time line from initiation of the innovative

financing project to the upcoming final selection of State proposals is something in which we take particular pride. We established FHWA Test and Evaluation Project, TE-045 "Innovative Financing," under 23 U.S.C. section 307(a) in a March 14 memorandum (later published in the Federal Register). We asked the States to give us candidate projects and tell us what they would need to make the projects work. The States' response exceeded even our most optimistic expectations. By early last month, twenty-six States had submitted a total of 60 Innovative Finance proposals ranging from projects that cost a few hundred thousand dollars up to a billion dollars. The projects are diverse and financially creative. Some are intermodal in nature and most proposals recognize the importance of the connections between transportation modes and reflect the type of balanced transportation system that the ISTEA envisioned. The proposals include environmentally sensitive projects and high technology projects. They are spread throughout the nation and include projects in rural, suburban, and urban areas which may have been delayed for years. We expect to obtain a substantial base of financial data and information from these projects which may be used to create flexible investment strategies and ultimately contribute to future transportation legislation.

Let me highlight the characteristics of some projects:

- <u>ISTEA Section 1012 Loans</u> - Working through our Innovative

Financing pilot, we received proposals for section 1012 loans. These proposals involve loans to revenue generating projects and request more flexibility on repayment methods.

- ISTEA Section 1044 Toll Credits - Several States would like to use the Section 1044 toll credit provisions but under existing FHWA guidance cannot pass the current maintenance of effort (MOE) test. We are looking at ways to construct a prospective maintenance of effort test giving states credit for future incremental investment.
- Matching Funds - A number of States have indicated that local governments, transportation improvement districts, community organizations, and private parties are willing to provide their own funds to match Federal-aid.
- Bond Projects - Most States do not use the Federal bond provisions in 23 U.S.C. 122. Those provisions allow Federal-aid to be used to pay off bond principal and certain interest costs. We are currently reviewing the section 122 proposals we've received. States have also advised they may be able to get better bond ratings if they can show a Federal income stream beyond the authorization period. Naturally we cannot commit to authorizations beyond 1997. Our research has found that States are using Federal apportionments to stand behind other revenues. We would like to see this practice more widely accepted if it helps the States.
- Unobligated Balances as Credit Enhancements - Some States have proposed using their unobligated balances to serve as a credit

enhancement for a debt issuance. They suggested they would like to be able to tell their bond underwriters that if a bonded project failed to make a payment, State unobligated funds could be used as reserve.

- State Revolving Funds for Project Loans - While Section 1012 permits a State Revolving Fund financed through re-paid toll loans, and S. 1714, pending legislation recently introduced by Senator Baucus, entitled the State Transportation Financing Improvement Act of 1993, would permit the States to set up State Revolving Funds, our knowledge and experience with these funds is very limited. We would like to see some States establish Revolving Funds using Federal-aid. Results could provide a base of knowledge for future legislation.
- Public-Private Partnerships - States have proposed certain types of highway related public-private partner activities which would infuse a State's transportation program with additional revenue and be used by a State to improve transportation facilities.
- Tapering Federal Participation - Some States have asked us to play a larger role in the high risk period of environmental and preliminary design and have requested a variable participation ratio which would be tapered as the project progresses towards completion so that the ultimate non-Federal share would remain the same.
- Phased Funding - Some States have requested that FHWA extend phased funding as it has done on the Interstate system

to all eligible Federal-aid projects. The total costs of a single project may tie up a State's Federal-aid apportionment for years if phased funding is not otherwise employed.

Current Status

Direct work with the States began about four weeks ago and we asked that work be completed in early July. We are currently in the process of evaluating the final State proposals and hope to contact those States with acceptable Innovative Financing proposals soon. States will be required to develop written evaluations of the proposals/projects that are accepted. Using these State reports along with FHWA assessments, the Department will report to Congress on this program.

What We Have Learned

I would like to take a minute to address what we have learned and the future development of Innovative Financing within FHWA. Clearly, as we study, we are learning. The long-term revitalization of our Nation's infrastructure will require a partnering effort at all levels of government and with the private sector. To date, we know that one single strategy to finance infrastructure investment is not going to do the total job to allow us to build a transportation infrastructure second to none and to enable us to compete in this competitive world market. We need to use multiple strategies to leverage Federal dollars and maximize Federal, State and local, as well as public-private investment in transportation.

What we learn we will share with State and local governments and Congress. We are hopeful that the results will produce good ideas and useful tools, applicable across other modes of transportation and offer these as models for the States to use. And, we are going to continually evaluate and reevaluate the factors and financing considerations that serve to increase transportation infrastructure investment as we approach ISTEA maturity and look towards reauthorization.

Appropriate Roles of Federal, State, and Local Government, and the Private Sector

As we explore Innovative Financing concepts, the importance of the roles of the Federal government, the Department of Transportation and FHWA as facilitators have become ever more apparent. Since resources are limited, we must find a way to make the most of what we have. Applying tested innovative financing techniques to infrastructure development, providing clear guidance and technical assistance to our partners at the State and local level, making Federal guidance and red-tape less onerous and burdensome are the keys to getting the most out of our infrastructure dollars.

Closing

I believe that the Innovative Financing effort has enormous potential for our Nation's transportation infrastructure. FHWA is enthusiastic about being the "pilot" agency for the Secretary's Innovative Financing effort and we are pleased that the Committee has asked us to share our progress to date. I take seriously my

commitment to the Secretary and to the Congress to ensure that our research proves meaningful and valuable and helps achieve the vision Congress had when it enacted ISTEA. I look forward to bringing you in the future a report of success in this effort for which you have established the foundation.

APOGEE
RESEARCH
INC.

HEARING: INFRASTRUCTURE FINANCING NEEDS
(PART #5)

TESTIMONY OF: Joseph M. Giglio

Chairman of the Board,
Apogee Research, Inc.

BEFORE THE

PUBLIC WORKS
ECONOMICS &
FINANCE

SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT

OF THE

U.S. HOUSE OF REPRESENTATIVES

PUBLIC WORKS COMMITTEE

JULY 13, 1994

4350 EAST WEST HIGHWAY
SUITE 600
BETHESDA, MD 20814
301 652 8411
FAX 301 654-9355

Good Morning Mr. Chairman and Members of the Committee:

My name is Joseph Giglio. I am Chairman of the Board of Apogee Research, a public works consulting firm that specializes in economics, finance, and policy research. My experience includes positions with city and state agencies as well as several major investment banking firms. I also served as Chairman of the National Council on Public Works Improvement which prepared *Fragile Foundations*, a comprehensive report to the Congress and the President on the status of the nation's infrastructure.

Apogee's clients include a wide range of public and private organizations, but my comments today represent my own personal views. My testimony today will summarize the nature of the infrastructure investment problem that we face; present the general principles for a more successful policy; and discuss actions that can be taken to make describe some ways to help develop such a policy. While my specific examples draw on highways, the general principles hold for most of public works infrastructure as well.

WHAT IS OUR INFRASTRUCTURE PROBLEM?

It Is Not a "Needs" Based Problem

First, what is not the problem? The problem is not "America in Ruins." While the physical condition of much of our public works certainly could be better, with the important exception of some urban areas, this problem does not, I believe, threaten our economic or social well being.

In fact, the "needs" paradigm tends to encourage certain less promising solutions over others. The scale of needs ($3 trillion is usually the minimum required to play the needs game) often leads to solutions that emphasize the federal role over those of state, local, or private groups. Because they emphasize

engineering costs[1] rather than market demand, the needs concept is also at odds with market-based solutions.

What aspects of the public works dilemma are important in shaping public policy?

Part of a General Shortfall in Capital Investment

Very simply, economic output is a function of capital, labor, and the availability of natural resources. Given the limited extent of new natural resources to be discovered and exploited and the predictable growth in our available labor force, the productivity with which we use our resources remains the one key determinant of economic growth that we can influence.

In recent decades, the rate of growth in U.S. productivity has lagged significantly behind what we achieved in previous generations and behind that of our major industrial competitors.

The key force behind this slower rate of growth appears to be the lower rate of capital investment -- the flip side of higher rates of personal consumption. This decline in capital spending is not limited to just the private sector. Transportation investment (including rehabilitation and reconstruction) has dropped from 1.3 percent of GNP in the early 1960s to less than 0.8 percent today.

Firm-level case studies show that the relationship between transportation and productivity is robust and widespread, covers most major industries, every region of the country, and all modes of transportation.[2] The conclusion: transportation

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[1] The more advanced "needs" studies, such as FHWA's regular reports to Congress on the Status of the Nation's Highways and Bridges, correct some of these problems by emphasizing service-oriented measures.

[2] Apogee Research, *Case Studies of the Link Between Transportation and Economic Productivity,* prepared for the Federal Highway Administration, (January, 1991); *Transportation: Key to a Better Future,*" prepared for AASHTO, (December, 1990); and *The Economic Importance of the National Highway System*, prepared for the Trucking Research Institute, (February, 1994).

is as much an engine for private sector growth today as it has been throughout U.S. history.

The Need for a Large-Scale Investments is Largely Ignored

The consensus of most transportation economists during the 1970s and 1980s was that the large national systems were built and that the remaining transportation decision were almost exclusively local or regional. As such, there was limited need for a national program. The federal highway program, in particular, has grown to look like one of revenue sharing. As a result, while greater equity exists in the allocation of funds among the states, this also creates a tendency for these funds to be spread across a large number of small and medium sized projects.

Large-scale projects such as new bridges or tunnels and new beltways are increasingly difficult to fund. While the wisdom of large projects can and should be debated on their merits, at the present they are often effectively ruled out before hand. The lack of financial support in this area is a significant change from past policy.

Focus Should Be On How Well, Not How Much

Throughout most of the economic history of transportation, the quality of the system has been measured in rather straightforward terms -- the number of ton-miles of cargo moved, or the number of passenger miles produced. These measures had greater meaning in an economy dominated by heavy manufacturing and agriculture.

Today's world of international competitiveness depends more on quality of service than on bulk. Will the traffic keep us from getting to our meeting on time? Will the auto parts arrive as scheduled to meet the needs of the just-in-time manufacturing system? Will the over-night delivery system make sure that the spare micro-chip arrive in time? The economic costs of relatively small changes in the level of service can snowball very quickly.

GENERAL LESSONS

The Interstate Highway System represents perhaps the most important national transportation investment of this century. I believe this success resulted from two factors: a commitment by federal and state leaders (combining elected officials and transportation professionals) and the financial institution of the Highway Trust Fund.

Let me summarize: leadership combined with financial institutions will be the key ingredients to success in the post-Interstate era.

While the implementation of ISTEA and the chaos created by the Clean Air Act Amendments have diverted attention for a few years, I believe we are now beginning to see signs of this new leadership. FHWA's recent Innovative Financing Program stands out for its imagination and for its reliance on positive federal leadership. The state DOTs also appear ready, with a growing number of states beginning to take advantage of the potential within ISTEA and developing their own ideas. Examples include California (under AB 680), Washington (under SHB 1006), Florida, Texas, and many more.

What are the desirable characteristics of the new financial institutions in this post-Highway Trust Fund era? I believe they should emphasize:

- a market orientation;
- the ability to finance different types projects -- large-scale projects seem most likely to be missed;
- flexibility to facilitate different types of solutions -- different mixes of public and private involvement, for example; and
- a state and local rather than federal focus.

SOLUTIONS

Is ISTEA The Answer?

The new Intermodal Surface Transportation Efficiency Act of 1991 developed with the leadership of this committee represents the most dramatic change in federal and thus national transportation policy since 1956. ISTEA provides a formal framework that recognizes many trends that had been underway for years and encourages others that are relatively new. The key changes include increased flexibility in how states, cities, and private bodies can use federal funds; a requirement for a much more open and inclusive planning process; and an encouragement to DOTs and MPOs to use innovations in technology and in transportation solutions.

Not a Direct Financial Solution

While ISTEA authorized a new high in federal spending, after adjusting for inflation, obligation ceilings, and heightened expectations from new interest groups, it provides a marginal increase at best. The prospects for significant increases in direct federal funding in the near future are non-existent unless linked with tax increases.

Recent history at the state level shows that the public is often willing to pay higher user fees if there is a prospect for improved services. ISTEA also encourages the use of public and private toll roads, state transportation banks, and a range of other innovations. How fast and to what extent are state and local governments willing to take advantage of these new options?

ISTEA Innovations Need to be Encouraged

ISTEA contains much potential in terms of new technologies and financing tools. The traditional financial mechanisms worked so well for so many decades that it will take some time and some education to implement change. The federal government needs to encourage this era of experimentation.

Few financial tools are truly new, but how they are implemented may be new. To help resolve our current public works problems, any new financial institution should provide:

- financial flexibility, including the ability to leverage existing resources; and

- encourage local communities to face the multi-year organizational and political battles needed to make major capacity additions.

These positive characteristics can, I believe, be combined in the form of state transportation banks or other variations of revolving loan funds. Properly structured, such funds can take advantage of the many direct and indirect innovations that Congress provided in ISTEA: The use of federal funds as loans; loan terms that recognize the early-stage risk of new transport investments; the ability to use federal funds to support toll facilities, whether developed by the public or private sectors; recognition of the other sources of public investment in transportation, including ongoing investments in toll facilities; etc.

Revolving loan funds have been a tried and true tool of infrastructure finance for more than thirty years. While transportation agencies have yet to be try them on a significant scale, legislation is in place in several states: Texas, Washington, Florida, and Minnesota come to mind. This approach is completely consistent with the innovative finance tools provided with Section 1012 and Section 1044 of ISTEA. Indeed, FHWA's recent Innovative Finance Initiative is likely to encourage several more states to propose transport loan funds that are consistent with ISTEA.

How Do They Work?

How do these techniques work? Very simply, existing transportation funds (either federal or state and local) are leveraged. Leverage is generated in two ways: by using federal or state/local funds as seed capital in a reserve and by issuing bonds secured by the stream of future tolls and other revenues. As these future payments are received, the bonds are paid off and additional resources are provided to support new projects. The speed with which new funds are generated depends on the terms behind each loan -- the shorter the loan term and the higher the rate of interest, the greater will be the funds generated. The fund, however, can have

considerable flexibility in the terms it offers.

The key characteristics of such loan funds are that they are market or demand driven, they provide the resources needed to support large-scale projects and they represent a flexible financial institution that can provide continuity. Such continuity is important for planning purposes. The attached charts show two forms of such a loan program -- Figure 1 shows a simple, unleveraged program and Figure 2 shows one that issues bonds to provide leverage.

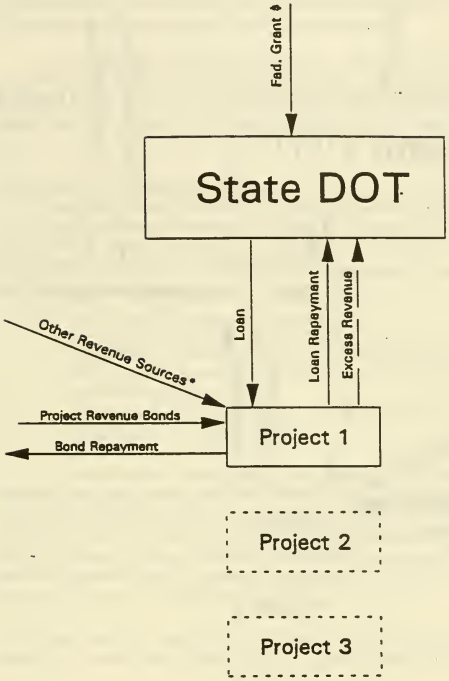
Value of Innovative Finance Techniques

These techniques can offer significant help in reducing the backlog and meeting overall investment needs. By making it possible to leverage existing streams of funding, they can, in turn, generate new funds. These funds can come from tolls and related user fees or from private equity. The user fees can also be used to back bonds.

Simulation runs show that as much as a billion dollars a year in loans could be supported with only about $350 million a year in federal outlays for the start-up capital. Loans would be at market rates and as repayments were made to the fund additional projects could be funded.

Perhaps the most important benefit provided by these additional resources is to speed the construction of worthy projects. Remember, the largest cost in most projects is the cost of deferred benefits due to delayed construction. These benefits will, in turn, generate jobs, private sector income, and general tax receipts.

FIGURE 1
Simple Loan Program



* State aid, private development assessments, etc.

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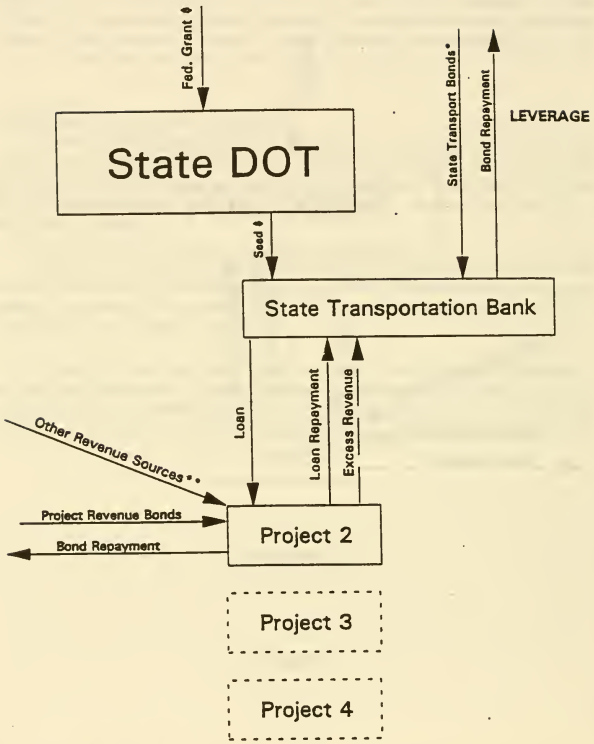
FIGURE 2
Leveraged Loan Program



* With Credit Enhancement (for more leverage)
** State Aid, Private Development Assessment, etc.

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Does Current Legislation Provide Adequate Support for These Techniques?

The simple answer is yes. Continued leadership is needed to help re-orient existing transportation professionals to these new financial methods. FHWA can provide a key role in this regard -- indeed, FHWA's recent Innovative Finance Program stands out as a positive example of federal leadership. Success stories are beginning to appear, and these should be encouraged.

Some technical changes and clarification of Congressional intent would help, but ISTEA already provides the basic framework. Important areas of change would include a broad definition of tolls to include other dedicated user fees such as impact fees based on land development and legally dedicated sales taxes.

How Have These Techniques Worked?

States have used some form of revolving loan funds for infrastructure for more than thirty years. Currently, virtually every state has such a fund to provide loans to build wastewater treatment facilities. As a result, a variety of operating models have been tried. In developing these programs, states have encountered several types of problems:

- Lack of training in financial techniques;
- Limited seed capital to take full advantage of the loan funds potential;
- Need to educate potential project sponsors on how loans differ from more traditional funding; and
- Problems in setting priorities across different types of projects with different financial characteristics.

In transportation, several states have enacted loan fund legislation. More states have begun to make use of toll financing. California's AB 680 process stand out with the SR 91 project under development in Southern California. This project will make innovative use of time-of-day pricing (a form of congestion pricing). Also in Southern California, the $1.2 billion San Joaquin Hills toll road used tolls and development fees to fund its construction (a backup federal line of credit provided important psychological support).

Most ambitious perhaps is Washington's SHB 1006 program. This effort asked for private sector bids to build, finance, and or operate transportation

facilities in the state. No limits were placed on mode. Bidders were allowed to combine public and private funds. Fourteen bids were received with a combined value of $4.8 billion. These ranged from new toll bridges and highways, to urban tunnels, to area-wide congestion pricing, to ferries, to airport people movers. The state is in the midst of evaluating these proposals with up to six projects allowed under the legislation.

Appropriate Public Roles

While I believe the focus of project decision making and finance should be at the state and local level, there is a clear and important role for the federal government. In addition to its current programs, DOT can serve as a key source of seed capital for state loan funds. In doing so however, these funds should be provided in as flexible a manner as possible. FHWA also has an important role as cheerleader and as facilitator in traversing historical practices.

State and local governments are the logical choices to execute these projects and will have long-term responsibility to ensure that they are effective. Private firms provide equity (cold cash) and help generate new ideas and implement new technology. As with many things in life, success requires a series of ever-changing partnerships.

In looking back over recent federal policy toward infrastructure, I find my optimism growing. The recent efforts by FHWA and many state DOTs to implement new financial institutions should be encouraged by the Congress. Such encouragement can be indirect through kind words or more tangibly through report language and perhaps incentive funds. It also could take more permanent form when ISTEA is re-authorized.

Thank you for the opportunity to testify today. I would be happy to respond to any questions.

Testimony by

FELIX G. ROHATYN

Senior Partner, Lazard Frères & Co.
Former Chairman, Municipal Assistance Corporation

To

The Subcommittee on Investigations and Oversight

COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION
U.S. House of Representatives

Washington, D.C.

Wednesday, July 13, 1994

Mr. Chairman; members of the Committee. I appreciate the opportunity to address you on a subject of critical importance to the economic and social life of our country: its investment in physical facilities.

Every year or two a natural disaster comes along and points up the need for Federal assistance in the area of public investment. This takes the form of disaster assistance after events such as Hurricane Andrew; the mid-western flood; the California earthquake. There is, however, a need for a greater permanent federal involvement in public investment in this country. State and local governments are, in most cases, at the limit of their financial capabilities while, all over the world, a greater emphasis is placed on public investment. This is driven both by the private sector need for more infrastructure support required by modern technology as well as the need for more real job creating capability of the public sector.

For the Federal government to play a permanent and constructive role in public investment one basic principle should be adopted. The Federal effort should be separate and distinct from the expense budget. It must also be fiscally responsible.

The fact that investment in a school building or a bridge is now treated as if it were next week's welfare payment is economic nonsense; it also constrains much needed investment due to the existing budgetary caps. These are quite appropriate as expenditure limits but not as limits on genuine investment. No private corporation could function if its investment in plant and equipment could not be financed by borrowing and were treated as an everyday expense. This objective can be accomplished by the creation of a

free-standing, independently financed public corporation to assist state and local governments with their investments.

An aggressive, long-term federally assisted public-works construction program is an economic and social necessity. Investing $25 billion to $35 billion annually could generate from 800,000 to 1,000,000 jobs each year; could be part of a targeted defense-conversion plan and, if combined with Civilian Conservation Corps-type training camps could provide training and employment for inner-city youth. It would also be psychologically uplifting at a time when fear of new layoffs in the private sector, as well as of cutbacks in state and local governments, is pervasive. In an economy of $5 trillion, this is an extremely modest program, unlikely to have inflationary impact and providing very mild stimulus.

The challenge is to create a structure that could serve as the centerpiece for such program. New York's Municipal Assistance Corporation could be a useful model.

MAC was created in 1975, by the State of New York, to provide financing for New York City, then in serious financial difficulties. Between 1975 and 1984, it raised nearly $10 billion. Through the sale of MAC bonds, backed by a portion of the city sales tax, New York City was able to significantly increase its investment in its physical facilities. This investment provided significant stimulus to the City's economy. The investment program, financed by MAC, lasted 10 years, from 1975 to 1985. Since 1985, MAC has been paying down its debt and will have retired all of its outstanding bonds by 2008. None of MAC's debt appeared on the City's

or the State's budget. To the extent MAC made use of a portion of the City sales tax for debt service, that amount, and that amount only, was charged to the City's expense budget.

A similar approach, using a longer time frame, should be adopted at the federal level. We need not start with the largest possible program. Rather, the initial goal should be limited, though capable of expansion as the program proves itself. To illustrate, let's consider a $200-billion, 10-year effort.

The federal government would create the "Interstate Financing Corporation (IFC)" with about $100 billion of borrowing authority. The IFC would provide incremental financing to state and local governments over a 10-year period on a matching-fund basis. About $100 billion, or 50%, would be generated by sales of IFC bonds, guaranteed by the U.S. government. About $40 billion, or 20%, would be provided by participating states on a basis reflecting their distribution share; this could even take the form of the states actually subscribing to the stock of the IFC for their contribution. The balance would come on a pay-as-you-go basis from proceeds of the revenue stream described below. This would be an extremely conservative financing structure.

Revenues could be generated by raising the federal gasoline tax by 2 cents a year for five years -- an annual increase of about $2 billion annually. The revenue stream, which would build to $10 billion a year after five years, together with the State share, would support a 10-year, $200-billion investment program of which $100 billion would consist of borrowings. It would fully service and retire the outstanding bonds after 40 years. The

federal guarantee would only come into play if Congress interrupted the revenue stream. The debt-service coverage should result in an investment-grade rating for the bonds -- which would make them eligible for pension-fund investment. To insure fiscal restraint, bond covenants would prohibit the issuance of additional bonds unless additional revenues were dedicated. (Schedule A is but one theoretical model of debt-service coverage and cash flow for such a program. It assumes the bonds to be taxable. It assumes an abrupt cutoff after year 10, but as a practical matter, any program would build down more gradually.).

There would be ample capital available to purchase these bonds. For example, the total amount of private and public pension funds is presently about $3 trillion. This is expected to double over the next 10 years. A $200-billion, 10-year, public-investment program, of which about $100 billion would come from borrowing, could be entirely funded by the commitment of less than 5% of the *increase* in pension funds becoming available over the same period. Naturally, the bonds would have to meet the most stringent fiduciary standards; they would also be sold to mutual funds, financial institutions and general investing public.

The only federal budgetary cost would be the value of the guarantee(no more than 1% of principal, or $1 billion over 10 years) and the IFC borrowing should be totally off-budget. The cash flow would be revenue neutral. A strong control mechanism, such as MAC's board of directors--consisting entirely of independent, private-sector directors--would insure funds were used prudently. The board would also have to certify that

the investments financed by the IFC would be incremental to the States' and Cities' existing programs and not a substitute therefore.

The imposition of additional energy taxes is obviously a political challenge. But an annual increase of 2 cents a gallon for five years, earmarked for new construction and job creation, seems a small price to pay. Oil prices are now near their lowest level, in real terms, for the past 30 years. The benefits of the new investments and the 750,000 - 800,000 jobs created annually far outweigh the added cost of 2 cents per gallon of gas, which translates to about $20 per year for someone driving 20,000 miles.

The requirement of a 20% local share may be a problem for some states -- but cost sharing is probably a necessity. The subscription, however, would take place over time in proportion to the overall borrowing program. The program should also provide that some investments would generate their own revenues -- toll roads, bridges, etc. -- that could be used for further expansion or accelerated debt repayment.

The Nation's economic well-being has historically been dependent on public investment -- under both Democratic and Republican presidents. Franklin D. Roosevelt helped steer America through the Depression, in part, through the activities of the Reconstruction Finance Corp. and other significant public investment projects. These dealt with urban and rural problems, with electrification and water, with roads and bridges. In the 1950's Dwight D. Eisenhower launched the interstate highway program, which helped sustain an economic boom well into the 1960's.

At a time when we are looking for ways to fight crime, offset job losses in the private sector and improve the quality of urban life, a significant public-investment program is long overdue. It should do more than the present focus on building jails. It should appeal to Republicans and Democrats alike. It is consistent with President Clinton's original call for $80 billion in infrastructure over four years but has the advantage of a longer time frame allowing for better planning and commitments. It would be a fitting part of President Bill Clinton's call for change and for investment in America.

CORPORATION
FOR THE CITY
OF NEW YORK

INFRASTRUCTURE FINANCING ANALYSIS
$200 billion 10-yr Program; Gas Tax Gradually Increased by 10 cents
$billions

Assumptions:

Treas. Rate	7.60%
Spread to Treas	0.35%
Leverage X	11.31
Debt Structure	30yr,Lvl Dbt
Local Share	20%
Gas Tax Incr.	2 to 10 cents in 5 yrs

	USES				SOURCES				Agency	Cumm-	
	Infrastrct	Debt	Other	Total	Federal	Net.Loc.	Debt	Total	Debt	ulative	
YEAR	Spendin	Service	Uses	Uses	Gas Tax	Share	Proceeds	Sources	Outstndn	Spending	Coverage
1	7.00	0.00	0.00	7.00	2.00	1.40	3.60	7.00	3.60	7.00	12.57
2	9.00	0.32	0.00	9.32	4.00	1.80	3.52	9.32	7.09	16.00	9.53
3	10.00	0.63	0.00	10.63	6.00	2.00	2.63	10.63	9.65	26.00	9.28
4	14.00	0.86	0.00	14.86	8.00	2.80	4.06	14.86	13.62	40.00	8.19
5	17.50	1.22	0.00	18.72	10.00	3.50	5.22	18.72	18.70	57.50	5.94
6	22.50	1.68	0.00	24.18	10.00	4.50	9.68	24.18	28.19	80.00	3.94
7	26.00	2.54	0.00	28.54	10.00	5.20	13.34	28.54	41.23	106.00	2.69
8	29.50	3.72	0.00	33.22	10.00	5.90	17.32	33.22	58.10	135.50	1.91
9	31.50	5.25	0.00	36.75	10.00	6.30	20.45	36.75	77.92	167.00	1.42
10	33.00	7.06	0.00	40.06	10.00	6.60	23.46	40.06	100.52	200.00	1.10
11	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	99.38	200.00	1.10
12	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	98.15	200.00	1.10
13	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	96.82	200.00	1.10
14	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	95.39	200.00	1.10
15	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	93.84	200.00	1.10
16	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	92.17	200.00	1.10
17	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	90.37	200.00	1.10
18	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	88.42	200.00	1.10
19	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	86.32	200.00	1.10
20	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	84.06	200.00	1.10
21	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	81.61	200.00	1.10
22	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	78.96	200.00	1.10
23	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	76.11	200.00	1.10
24	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	73.03	200.00	1.10
25	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	69.71	200.00	1.10
26	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	66.12	200.00	1.10
27	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	62.25	200.00	1.10
28	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	58.06	200.00	1.10
29	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	53.55	200.00	1.10
30	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	48.68	200.00	1.10
31	0.00	9.13	0.87	10.00	10.00	0.00	0.00	10.00	43.42	200.00	1.13
32	0.00	8.81	1.19	10.00	10.00	0.00	0.00	10.00	38.09	200.00	1.18
33	0.00	8.50	1.50	10.00	10.00	0.00	0.00	10.00	32.58	200.00	1.21
34	0.00	8.27	1.73	10.00	10.00	0.00	0.00	10.00	26.90	200.00	1.26
35	0.00	7.91	2.09	10.00	10.00	0.00	0.00	10.00	21.13	200.00	1.34
36	0.00	7.45	2.55	10.00	10.00	0.00	0.00	10.00	15.38	200.00	1.52
37	0.00	6.59	3.41	10.00	10.00	0.00	0.00	10.00	9.99	200.00	1.85
38	0.00	5.41	4.59	10.00	10.00	0.00	0.00	10.00	5.38	200.00	2.58
39	0.00	3.88	6.12	10.00	10.00	0.00	0.00	10.00	1.92	200.00	4.82
40	0.00	2.07	7.93	10.00	10.00	0.00	0.00	10.00	0.00	200.00	
	200.00	273.91	49.36	523.27	380.00	40.00	103.27	523.27			

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STATEMENT OF LOUISE FRANKEL STOLL
ASSISTANT SECRETARY FOR BUDGET AND PROGRAMS
U.S. DEPARTMENT OF TRANSPORTATION

BEFORE THE SUBCOMMITTEE ON INVESTIGATIONS AND OVERSIGHT
OF THE HOUSE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION

ON INFRASTRUCTURE INNOVATIVE FINANCING

July 13, 1994

Introduction

Mr. Chairman and members of the Subcommittee, I am very pleased to appear before you today to continue the discussion on the condition of our Nation's transportation infrastructure. I and my colleague Jane Garvey, Deputy Administrator of the Federal Highway Administration, will describe today the steps DOT is taking to utilize Federal transportation dollars more effectively to address the disparity between the needs and current investment in America's transportation system. This Administration has moved expeditiously to do this. In January of this year the President issued Executive Order 12893 on infrastructure investment. This mandate required rigorous cost benefit analysis for federal investment in infrastructure projects, more effective management of our infrastructure and increased private participation in its financing. In February, Secretary Peña issued his strategic plan which identified infrastructure investment as a primary goal of the Department. In March, he established the Task Force on Innovative Financing for Infrastructure Investment that Jane Garvey and I co-chair. Shortly thereafter, Rodney Slater, Administrator of the Federal

Highway Administration, solicited pilot projects from the states' transportation departments. By April project proposals were received from all over the country. For the past two months we have been evaluating these projects, working with their sponsors and testing their appropriateness to move forward.

I applaud this Subcommittee's initiative for addressing the complex and yet important issue of needed transportation capital investment. These hearings underscore the significance of transportation infrastructure to our economic vitality and the effect that its operational efficiency has on the price and availability of goods both at home and in markets abroad. The hearings have also highlighted the nature of the public trust we hold: Americans expect their roads, airports, rail and transit systems to work - and work well, and they hold us accountable when they don't.

Federal Transportation Infrastructure

In previous testimony before this committee, DOT officials have reported the degree of underinvestment in the nation's transportation infrastructure. The gap between federal revenues available for investment and those needed to maintain the condition and performance of the system results in a backlog of unaddressed needs: highway pavement reconstruction, airport facility improvements, inadequate capacity and bridge and transit deficiencies. Consequently, our transportation system's performance is affected by long delays and traffic congestion.

Highway congestion in 50 of our nation's most populous urban areas costs our nation over $39 billion a year in fuel wasted and lost productivity. Air traffic delays are escalating: twenty-three (23) airports are already experiencing delays of more than 20,000 hours per year and this is worsening annually.

Available resources continue to fall short of the $55.5 billion per year needed from all sources - federal, state, local - to maintain our highways and transit systems and the $7 billion per year needed for airport capital improvements. With a 5-year outlook of deficit reduction and straight-line budget caps on discretionary spending, federal infrastructure investment is not likely to grow substantially.

The vehicle of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Administration's 1995 budget requesting full funding of its core programs is an important step forward. We hope that this '95 Budget request receives support from you, in the final stages of deliberation. The President's Executive Order requiring rigorous cost benefit analysis and better management of infrastructure facilities further advances our efforts to both invest strategically in, and maximize the effectiveness of, our infrastructure. We will exploit the flexibility that exists in ISTEA to utilize and leverage federal funds to speed up investment and, as a nation, benefit from the economic return of having an efficient distribution system for people and goods.

All of this helps: strategic investment; careful management of operations and facilities; a good legislative foundation for federal funds; a comprehensive approach to helping states and Metropolitan Planning Organizations use the flexible financing potential available to them. The common goal is to increase the investment capital available to transportation in order to drive the economy forward by attracting private sector investment and leveraging the availability of federal funds.

DOT's Investment Program

Although we have moved into high gear with innovative financing alternatives, these approaches and tools are not "new" to the federal government. Financing techniques were used to foster joint development projects with both public and private participants involving private bond financing. Transit properties in areas such as Washington, D.C., Dade County, Florida and New York City used joint development to help finance the construction of new rail station facilities. This technique involved a commitment of private dollars to construct public infrastructure, such as a portion of a new transit system or rail station, in exchange for the rights to develop on top of or around the new facilities.

In addition, toll roads and bridges and other state and locally-owned roads were financed by leveraging private capital. Credit enhancement techniques involving the Federal Government have also had a positive effect in stimulating new bond issues

for infrastructure. The San Diego Metropolitan Transit Development Board, for instance, dedicated future federal transit Section 9 funds as a credit enhancement to back the issuance of bonds for the purchase of new buses. The San Joaquin Hills Transportation Corridor Agency, on the other hand, received $1.2 billion in bonds for a new toll road backed by toll revenues. A federal guarantee of a backup line of credit to pay debt service was extended to cover the first five years of operation of the toll road, a start up period when toll revenues might be insufficient to service debt. These are just some examples of the instruments that are available and have been used successfully, but not widely, to involve the private sector in building transportation infrastructure.

Intermodal Surface Transportation Efficiency Act

With the passage of ISTEA in 1991, the states were given additional flexibility for funding their surface transportation capital programs. The Act provided new revenue options in the form of tolls; a waiver of state match; an ability to use toll revenues that are generated and used by public, quasi-public, and private agencies as the match to federal highways and transit funds; and the ability to recycle transportation-related grant funds through a state highway revolving fund, to be used for further highway and transit projects. ISTEA also allowed greater private involvement in building, maintaining, and operating toll roads and bridges, and allowed federal funds to be spent on

private toll roads. It gave the states unprecedented flexibility in using the federal highway and transit funds they received based on their own priorities. To date, for instance, over $1 billion of Federal Aid Highway funds have been "flexed" - that is, used for public transit projects. State transportation departments have been strong supporters of the flexibility provided by ISTEA, and have demonstrated an increase in its applications. Unfortunately, they have been far less interested in using its innovative financing provisions. They have reported concerns about several issues including the complexity of the new ISTEA-provided opportunities, impacts of state laws and regulations and the effects of environmental and planning requirements. Further, we understand that some states are concerned about their ability to issue tax free bonds if they want to enter a management contract with a private entity to operate a toll facility. Current tax codes limit the term of such management contracts to five years.

To address these issues we in the Department of Transportation embarked upon an extensive outreach and education effort to simplify for states the use of ISTEA provisions. The goal was to make the role of federal funds more effective in leveraging additional dollars from other sources. The Federal Highway Administration, for example, issued a handbook, "Guidance for State Implementation of ISTEA Toll Provisions in Creating Public-Private Partnerships", to the states with practical guidance on how to carry out the law and suggested language for

changes in state laws to allow both private equity capital and debt to finance projects. We have held a number of symposia to highlight and discuss existing barriers to public-private partnerships and assess use of the law.

Alternate Financing

Secretary Peña realized that if we were to expand the uses of infrastructure funds and the available capital for infrastructure investment, we had to make the ISTEA process clearer to the states and the specific projects more attractive to the private sector. As a primary player in transportation investment, the federal government would act as a catalyst in leveraging additional state and private capital to reduce the infrastructure "deficit". To initiate this effort, Secretary Peña formed a task force co-chaired by me and Jane Garvey, Deputy Administrator for FHWA. We were charged with spearheading an approach to infrastructure financing that cut across all transportation modes and would better leverage traditional grant programs, attract new capital and create a reliable funding program, given constrained federal budget resources, for America's transportation system. In the Department we have educated ourselves through a series of seminars on financing techniques to foster a better understanding of how the private markets work; and we have created a common vocabulary across the modes and throughout the Department so we can address the full spectrum of transportation projects. We have reviewed case

studies to learn from their financial failures and successes.

The Department of Transportation Task Force is exploring the feasibility of various techniques such as using Federal grant funds as a capital reserve or to buy bond insurance, provide loans which might be repaid based on interest only for the first several years, and allow short term lines of credit using Federal dollars collateralized by future apportionment monies within a State.

At the policy level, we are reviewing with each mode administrative, regulatory and legislative processes to eliminate obstacles which may limit a state's ability to develop financial solutions to capital financing under ISTEA. We are also developing specific promising financing approaches for select capital projects. Our intent is to develop a cadre of success stories - projects which have gone through the ISTEA planning process and been advanced to construction sooner than would have otherwise been the case, by the effective leveraging of federal funds and/or the infusion of new capital.

Each modal Administrator with an infrastructure program has, in turn, as part of our initiative, established an Infrastructure Finance Task Force parallelling the Department's Task Force, of upper level, interested people to examine the unique circumstances of the mode, including impediments in law, practice or habit to attracting outside capital. We have asked these modes to remove, within the existing law, obstacles that the Federal Government may inadvertently be laying in the path of investment

arrangements. In addition, each mode, in consultation with its regional offices, transportation providers and industry, has developed a list of projects as candidates for innovative financing techniques and, for each, we are working to develop a strategy to carrying the projects forward.

In the process, we have invited Governor's offices and State Treasurers to join our efforts and work with the traditional transportation providers and interest groups in thinking creatively about financing their infrastructure needs. Many states are, in fact, pushing the envelope and implementing innovative approaches to infrastructure investments. Virginia, California, Missouri, Arizona, Florida, Washington, Minnesota, Pennsylvania, and Texas, for example, have moved to enhance the potential for public/private partnerships, including passage of laws to allow such partnerships. While many states are focusing first on highways and looking to expanding traditional toll systems, some, notably Washington state, have included transit, maritime, rail and airport projects in their approach. Most states are seeking to involve the private sector to a greater extent in order to bring new capital to the field.

Closing

Federal, state and local governments share responsibility in ensuring that the infrastructure is adequate to meet the nation's critical transportation needs. A 1% improvement in overall efficiency of our transportation system translates into $100

billion in savings across the economy within a decade, with improved safety and quality of life for all Americans.

ISTEA made many more projects possible and gave the States unprecedented flexibility to their application of alternate financing instruments. Secretary Peña and the Department are now capitalizing upon this flexibility. This Innovative Financing Action Plan is not a replacement of federal participation - the federal commitment must remain strong and consistent as the cornerstone of the Plan - but rather it is an augmentation of the federal financing assistance program to enable us truly to build America for the 21st century.

ANTHONY V. ZICCARDI

STATEMENT OF THE NATIONAL ASSOCIATION OF HOME BUILDERS

before the

SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS OF THE COMMITTEE ON PUBLIC WORKS AND TRANSPORTATION UNITED STATES HOUSE OF REPRESENTATIVES

on

ALTERNATIVE INFRASTRUCTURE FINANCING TECHNIQUES

July 13, 1994

Mr. Chairman and Members of the Subcommittee:

Thank you for allowing me to present the views of the National Association of Home Builders' (NAHB) 170,000 member firms, representing over eight million working men and women. It is a privilege to testify before your subcommittee on infrastructure financing.

As requested, our testimony will describe the "infrastructure crisis" from the home builders' perspective, and outline various types of "secondary market" approaches to enhance infrastructure finance. Our testimony will also identify legislative changes that would facilitate the creation of a secondary market.

BACKGROUND

Through a series of hearings held by this Subcommittee, the need for increased investment in our nation's infrastructure has been well documented. Over the last few decades, we have witnessed a reduction of infrastructure investment by all levels of government. Federal aid to state and local governments for infrastructure such as grants for highway construction, mass transit, waste water treatment, community development and revenue sharing declined by 6.8 percent per year between 1978 and 1993. Not only must we address funding for repair and maintenance of existing facilities, but we must look to future investment needs as well. Additionally, the lack of funding resources is only compounded when we consider the additional demands for increased infrastructure investment posed by environmental mandates. The bill to pay for infrastructure ranges anywhere between $200 billion, by conservative estimates, to as high as $3 trillion.

The National Association of Home Builders has been an active member of the Rebuild America Coalition since the coalition's inception in 1987. As builders, we recognize that the condition of our nation's infrastructure is essential to the continued prosperity and competitiveness of our nation. The infrastructure crisis also raises quality of life concerns which provide strong impetus for the antigrowth movement nationwide. Typically, a locality responds to this movement by imposing local land use regulations or impact fees designed to combat growth related infrastructure problems. These regulations and fees represent the single most important source of escalating housing costs in the country. While the scope of the problem varies from region to region, few communities are left unscathed by the deterioration of the nation's public works and the impacts of the infrastructure crisis on housing affordability.

OVERVIEW

A. The Condition of our Infrastructure and Its Impact on Housing

As mentioned previously, while the Federal government has reduced its expenditures on infrastructure, the responsibility has fallen more squarely on the shoulder of states and municipalities. Although the focus of this hearing is not **who** should pay the infrastructure bill, but **how** to foster infrastructure investment, a point should be made here. The lack of infrastructure investment and the assumption of responsibility by state and local governments is often manifested by shifting part of the burden to builders in the form of development exactions or impact fees. Unlike costs of on-site improvements for which builders routinely pay and which directly benefit residents of the new development, impact fees are up-front charges levied against new development to fund off-site capital improvements that may serve residents other than the new development.

If the cost of public infrastructure facilities is borne by developers, the result is increased costs of development, increased costs of housing, increased rents for tenants in new commercial buildings, and increased overhead costs for industry, etc. In the aggregate, these increased costs could prevent the development from proceeding altogether because small developers may not be able to front the necessary costs to install new public facilities. As is often the case with sewer facilities, the developer can afford to assume the up front costs for a new sewer main to the treatment plant. However, the existing plant may not have the capacity to accommodate the additional flow. The result is a slow down in development and/or increasing its costs.

Impact fees have other adverse side effects and are not the most cost effective means of financing infrastructure. The time at which residents and users pay the infrastructure bill partly determines the cost effectiveness of a particular financing option. Developers' up front financing of infrastructure through impact fees is more costly than bond-financed public improvements. When developers finance infrastructure through exactions and impact fees, they must secure credit at market interest rates. The payment of principal and interest on up front fees and charges is reflected in higher home sales prices and rental rates rather than in increased government collections of taxes and user charges. If local governments issue bonds, they can finance debt at tax-exempt rates that are typically 200-400 basis points below high grade corporate bond rates.

Impact fees are also regressive. Impact fees (which averaged $638 per home in 1991, **but go much higher in states such as California***) are customarily assessed on a per unit basis and therefore impose a disproportionate burden on developers and consumers of low-cost housing. For the same reason, they also tend to have the effect of excluding lower and moderate-income households from buying a new home.

While I have focused specifically on the impact on housing, it is noteworthy that the housing consumer is by no means the sole beneficiary of increased infrastructure funding. Regardless of the potential source of funding, if public facilities are not available, then there is no capacity to accommodate growth, commercial and industrial development are impacted as well. Public infrastructure supports the businesses that serve the residents of these communities and provide them with employment. If transportation facilities are not adequate to provide for efficient movement of people, goods and services, then we waste valuable "people hours" and energy/fuel idling on these roads, at the same time increasing emissions and unnecessarily increasing air pollution levels. In short, modern public facilities allow businesses to operate efficiently and cost-effectively.

B. Primary Infrastructure Funding Sources for State and Local Communities

The most common means of financing infrastructure has been and will continue to be, to issue bonds and service the debt out of general or dedicated revenue. Municipal bonds have two essential features that make them extraordinarily useful to state and local governments. First, the bonds are issued by the governments themselves, as individual units, which allows them to tailor their borrowing to meet their own local or regional needs, and forces them to be responsible, since they bear the burden of the debt service. Second, the interest on the bonds is generally tax-exempt to investors, which reduces the interest rate that state and local governments must pay to borrow in the capital markets. Interest paid on most state and municipal bonds is exempt from federal, and often state and local, income taxes. As a result, interest rates on these bonds are below the market rate for taxable bonds of comparable maturities, terms and risks.

There are primarily two types of bond issues utilized by states and municipalities to finance infrastructure. General obligation bonds are backed by the full faith and credit of the issuing jurisdiction and are paid back out of general revenues. Most states restrict the amount of bonded indebtedness that local jurisdictions can take on and require local governments to obtain voter approval for bond issues. Voters often are reluctant to approve general obligation bonds because they fear that property tax rates will be increased somewhere down the road to service the debt. As a result, revenue bonds are increasingly utilized by state and local governments. Revenue bonds are backed only by specific revenue streams such as user fees, special assessments, and tax increments.

*Escondido, Cal. Impact fee is $26,132 in 1993 for a single family home
Construction Industry Federation Survey, 1993

C. Impact of The Tax Reform Act of 1986

1. Arbitrage Rebate

One of Congress' major concerns in 1986 was that states and localities were issuing bonds too early in the financing process. In a practice called arbitrage, borrowed funds that were idle before they were required for construction were invested in taxable securities earning a yield higher than the tax-exempt yield paid by states and localities on their borrowing. The Tax Reform Act of 1986 (TRA) basically eliminated any prospect of arbitrage for states and localities by requiring that all arbitrage earnings be rebated to the Treasury with interest, unless all of the bond proceeds were expended within a certain period of time.

2. Public-Private Partnership

Another concern in 1986 was that tax-exempt bonds were being issued to finance private, as opposed to public needs. Congress addressed this concern by limiting the uses of bonds and the total volume of bonds issued for certain purposes. Under the TRA, bond-financed projects where more than 10% of the debt service on the bonds is backed by private resources are generally denied tax-exemption. Prior to 1986, these private use tests employed a 25% standard. The TRA provides exceptions to the private use rules for certain types of projects that would otherwise be ineligible for tax-exempt financing. These projects are exempted, subject to a number of restrictions. These projects include, among others, a variety of public transportation facilities, solid waste and hazardous waste facilities, sewage facilities, and facilities for the furnishing of water. Bonds issued for certain multi-family developments, as well as mortgage revenue and student loan bonds were also exempt. Congress made these exceptions in recognition of the important policy goals that the projects serve. However, in order to limit the total volume of the bonds, Congress consolidated existing volume caps for a variety of projects into a more stringent unified cap on all private-activity bonds allowed to be issued tax-exempt.

3. Bank Deductibility

Prior to the TRA, commercial banks were large investors in tax-exempt municipal bonds. TRA, however, eliminated banks' ability to deduct interest on debt incurred to purchase or carry tax-exempt bonds for all but a small class of municipal bonds. Banks were allowed to deduct 80% of their interest cost of carrying tax-exempt bonds before TRA. As a result, banks reduced their holdings of municipal bonds in nominal dollars.

As a result of TRA, banks have reduced their holdings of bonds. Commercial banks no longer support the bond market, but weaken it, since by selling bonds they add supply to the market. In fact, it is believed that banks would be selling at an even greater rate, but for the fact that their existing holdings in 1986 were grandfathered from the loss of bank deductibility of the interest cost of carry.

Communities that qualify as issuers of bank-qualified bonds enjoy a yield advantage over similar communities that do not qualify. This advantage varies depending on market forces. That is, small communities are able to finance their public needs more economically because the bank-qualified provision stimulates bank investment.

In this regard, raising the annual issuance limit for bank qualified bonds from $10 million to $25 million, as proposed in H.R. 2171 introduced by Rep. John Lewis (D-GA) and H.R. 3630 introduced by Rep. Bill Coyne (D-PA) would extend the interest rate benefit of bank deductibility to a wider group of small communities and provide current small issuers with greater latitude in planning their financing activities.

4. Overall Impact

As a result of the above mentioned changes, there has been a substantial weakening in the demand for municipal bonds. Banks have been virtually eliminated as investors by the loss of bank deductibility and now *add* to the supply of bonds. The municipal market must basically rely on individuals, acting directly or through intermediaries such as money market and mutual funds for investment demand.

The loss of corporate demand also affects the ability of bond dealers to provide liquidity to the bond market. Without banks or insurance companies as reliable investors, municipal bond dealers are less willing to take aggressive positions in municipal securities. To do so would expose dealers to the risks inherent in having to rely on individuals to purchase the securities. This loss of liquidity tends to increase the cost of borrowing for states and localities.

Most of the policy changes affecting demand for municipal bonds were not conceived expressly in those terms. These changes were enacted primarily for other reasons. As a group, however, these changes have affected federal policy towards municipal bonds by concentrating the demand in one sector, a result which has a direct and often measurable effect on bond issuers. Essentially, other things being equal, a more restricted base of demand exposes state and local governments to the prospect of increased costs and restricted financing options.

CREATIVE INFRASTRUCTURE FINANCE METHODS

A. Securitization of Infrastructure Bonds/Loans and the Facilitation of a Secondary Market

Congress is currently considering a variety of proposals to facilitate a secondary market for business, commercial, multifamily, and "community development" loans. The Senate passed as part of its community development banking legislation, H.R. 3474, a proposal which would facilitate a secondary market for small business and commercial loans. In conference on H.R. 3474, the House Banking Conferees are contemplating expanding the Senate provision to create a secondary market for multifamily and infrastructure bonds/loans or "community development"

loans as described in H.R. 2600 sponsored by Rep. Paul Kanjorski (D-PA). These various alternatives bills have one common thread in that they would facilitate the creation of a secondary market by applying the Secondary Mortgage Market Enhancement Act (or SMMEA) to various types of loans or debt. Congress passed SMMEA in 1984 and since that time, most observers agree, securitization of residential mortgages has increased the amount of capital available for home mortgages, assuring a continuous supply of capital and simultaneously bringing down its cost.

Generally, the securitization process combines traditional bank lending and the sale of securities to public investors. After loans are made by a bank or other lending institution, they are pooled with other loans and "sold" to a financing vehicle (often a trust), that, in turn, sells debt securities to public investors. The securities are collateralized by the pool of loans, and the interest and principal on the loans is passed through the financing vehicle to the investors. The funds generated by the sale of the loans serve as a new source of capital for the banks to make additional loans. However, federal securities, banking, tax and other laws currently pose substantial impediments to securitization of infrastructure financing. The Secondary Mortgage Market Enhancement Act removed these impediments to securitization for residential mortgages. Expanding the same benefits that SMMEA brought to residential loans to infrastructure loans and bonds would help create a secondary market and free up significant amounts of money for new financing.

Again, the various bills being considered would affect changes in Securities, banking and tax laws. Application of SMMEA type legislation to municipal bond and loans to finance infrastructure would in effect mean the following legislative changes:

(1) amendment of the Securities Exchange Act of 1934 to include securities backed by municipal bonds and loans to finance infrastructure as eligible for securitization if the security receives one of the highest ratings;

(2) extension of the settlement period allowable for these types of loans to six months recognizing that these loans are often originated only after commitments to purchase the securities have been obtained;

(3) preemption of certain state legal investment laws with respect to infrastructure loans and bonds thereby allowing investors to purchase these securities to the same extent that state law permits them to invest in U.S. government or agency securities;

(4) preemption of state blue sky laws which exempt from state securities registration requirements for infrastructure bonds/loans to the same extent as U.S. government or agency securities;

(5) as provided by SMMEA, the legislation would provide that a state could override any of these preemptions by enacting a statute to that effect within seven years after legislation was enacted; and

(6) change in federal banking law to lift restrictions to allow federally regulated institutions to invest in infrastructure bonds and loans.

Other changes contemplated to facilitate securitization, but not being considered in current legislation, include modification of the Securities Act of 1933. Current law exempts a security issued by a state or political subdivision from registration requirements. However, a similar exemption from registration would not be available to an issuer (or pooler) of these securities backed by state or local bonds. These registration requirements would have the effect of hampering the efficiencies sought by the creation of a secondary market.

Municipal bonds are a prime candidate for securitization because they typically are insured and/or backed by a municipality's full faith and credit or by a guaranteed income stream. Securitization of state and local bonds, would in all likelihood, reduce the interest rate cost to these issuers by broadening the market for these securities. For example, small investors who wish to hold bonds in their portfolios, but cannot currently purchase individual bonds themselves because of the high cost, can buy shares of mutual funds. These funds could create pools of their bonds to broaden their market thus reducing their risk and enhancing their cash inflow.

Private developers, in the course of their business, provide public infrastructure and would also benefit from a broader market for bonds. Formation of pools securitizing bonds would allow small local governments to issue long-term debt for infrastructure rather than relying on current tax receipts, grants or bank loans. Private developers could borrow directly from the local governments thus tapping into the tax-exempt market and reducing their borrowing costs. If developers are currently using bank loans to finance their infrastructure projects, legislation and/or regulation that would enable banks to pool and securitize these loans would also reduce developer borrowing costs.

The reduction in bond issuer borrowing costs resulting from securitization of bonds is not known. However, some estimates of interest rate reduction resulting from securitization are available. Feldstein estimates that creation of a government sponsored enterprise (GSE) for infrastructure finance could result in reductions of 40 to 70 basis points in borrower costs.[1] Reznick cites studies by Freddie Mac indicating that securitization of residential mortgages has

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[1] S.G. Feldstein, "Municipal Bond Insurance and Pricing"; in Fabozzi et.al. The Municipal Bond Handbook; Vol. I; Dow Jones-Irwin, 1983, pp.404-411.

resulted in mortgage interest rate reduction of up to 50 basis points. [2]

Infrastructure loans to builders fund both on- and off-site infrastructure facilities such as water and sewer hook-ups, ancillary roads, etc. This type of community development is essential to the home building process and more readily accessible financing for these projects would benefit the community, housing consumers and home builders. Creation of a secondary market for infrastructure loans would make it less expensive and easier to finance public infrastructure helping to alleviate the need for impact fees to finance infrastructure needs.

Application of SMMEA to infrastructure loans and bonds to facilitate a secondary market is also appealing because it does not involve any federal guarantee, either explicit or implicit, and will have no budget impact. NAHB urges the Subcommittee to express support of SMMEA application to infrastructure bonds/loans to House Banking and Energy and Commerce conferees.

B. Establishment of A National Infrastructure Bank ("Infra Mae")

NAHB's Infrastructure Task Force proposes the creation of a new government sponsored enterprise (GSE)--tentatively called the National Infrastructure Bank or "Infra Mae". The creation of a new GSE would require an act of Congress. Such an enterprise can provide long-term financing for infrastructure projects at significantly below-market rates of interest. Government-sponsored enterprises familiar to the home building community are Fannie Mae, Freddie Mac, and the Federal Home Loan Banks.

Infra Mae could provide credit enhancement for tax exempt infrastructure bonds and also provide more direct support to that part of the market--mostly private activity infrastructure projects--where tax exempt funding currently is not available. Because of the favorable interest rates on tax exempt financing, such financing will be preferred for infrastructure projects if it is available. This would limit Infra Mae's likely market share and will significantly affect Infra Mae's size. While Infra Mae would likely be a significant financial institution, it would not grow to the size of Fannie Mae or Freddie Mac, each of which supports hundreds of billions of dollars in loans.

Infra Mae would serve as a secondary market institution, supporting and strengthening primary lenders. It will be a complement rather than a substitute for private lending already taking place. Whether it provides credit enhancement for tax-exempt bonds or a secondary market institution for taxable loans, Infra Mae would need to set strict underwriting and servicing requirements for its participating lenders. Along with private financial institutions, state infrastructure banks might be among the primary lenders benefiting from Infra Mae's credit enhancement and loan advances.

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[2] Scott Reznick, Innovations in Structuring Public and Public-Private Investment in Infrastructure, Volpe National Transportation Systems Center, December 1993, p.8.

Infra Mae would provide the opportunity to create a major private institution dedicated to promoting infrastructure finance. Infra Mae would be especially valuable because of its involvement with so many kinds of infrastructure projects and funding activities. It would have long-term relationships with state and local institutions and private lenders and will have detailed familiarity with a wide variety of infrastructure projects. Legislation to create Infra Mae should include a mandate for the corporation to maintain and publish ongoing reports concerning the needs and state of infrastructure and infrastructure finance across the country.

In past years, Congress has considered and rejected proposals to create a government sponsored enterprise for small business loans. With the S & L scandal and budgetary concerns looming large, Congressional committees with jurisdiction over this issue, are skiddish about the costs of federal capitalization as well as the Federal government's contingent liability. In fact, the Banking Committees view legislation to apply SMMEA to various types of loans as a viable and politically practical alternative to the creation of a GSE for business loans.

C. Creation of State Infrastructure Banks

Infrastructure banks may assume several forms. The most commonly used infrastructure banks are bond banks, state revolving funds and substate pools. Bond banks are established by states to pool financing needs of all municipalities in the state. Acting like a "secondary market", pooling allows municipalities with high credit ratings to benefit from lower issuance costs, and it assists many unrated or low-rated communities to tap financial markets and obtain low interest loans. A sub-state pool is similar to a bond bank in that it represents pooling of the needs of municipalities and may in fact operate like a bond bank. One of the primary differences is that while a state bond bank operates for the benefit of all municipalities in a state, a sub-state pool is similar to a bond bank in that it represents pooling of the needs of municipalities and may in fact operate like a bond bank. One of the primary differences is that while a state bond bank operates for the benefit of all municipalities in a state, a sub-state pool is established for the benefit of a designated group of municipalities which have agreed to form the pool. The third form of infrastructure bank is the revolving loan fund. A revolving loan fund is usually capitalized with Federal and state grants and therefore has a permanent source of lending capital. Revolving funds are limited in their use in that funds may only be used to finance wastewater treatment facilities. A bond bank, on the other hand, usually does not have a permanent source of financing.

The first bond bank was created in Vermont in 1969. Since then, bond banks have been created in eleven more states and Puerto Rico. The eleven states are: Alaska, Arkansas, Illinois, Indiana, Maine, Michigan, Mississippi, Nevada, New Hampshire, North Dakota, and Oregon. Bond banks were created primarily because small municipal governments needed to obtain financing frequently for relatively small projects. The Michigan bond bank has been the largest lender so far; issuing $1.5 billion in debt. The Indiana bond bank has issued $828 million in debt. Other large lenders include New Hampshire, with approximately $500 million in total borrowing.

One drawback to bond banks is that relatively expensive environmental facilities have not been financed through bond banks. Also, the Tax Reform Act of 1986 imposed structural limitations that cloud prospects for creating bond banks in states that have not yet established them. The Government Finance Research Center reports that existing state bond banks plan to continue operation; however, the economic inducements for other states to create such institutions are marginal enough to make the effort unattractive. Thus, enactment of the legislation providing relief from some of the 1986 restrictions on tax-exempt funding would be an important complement to the bond bank model.

Since passage of the 1987 Clean Water Act, every state must have established state revolving funds (SRFs). State SRFs can be divided into categories; those created prior to 1987 and those created in response to meeting the CWA's requirements. Pre-1987 SRFs' are capitalized with state general obligation bonds issues. Once capitalized, a revolving fund will provides grants or loans at a below-market interest rate to municipal governments for designated purposes. Loan payments can be re-loaned to increase the number of loans and the total amount financed. The capitalization funds can also be used to reduce the interest rate at which loans are given to the municipality.

State revolving funds under the Clean Water Act are capitalized with the Federal capitalization grant and a 20% matching state share. The state share may be raised by various means, including state general obligation bonds, appropriations, dedicated taxes, and lottery proceeds. The state matching share may also be funded from bonds issued by the state or a state agency. The difference between a commercial bank and any revolving loan fund is the type and amount of subsidy the public fund provides to borrowers--usually in the form of favorable interest rates or extended repayment schedules. State loan fund managers must determine the extent to which they can or should provide loan subsidies to borrowers . The loan subsidy comes from the fund's capital and reduces the funds' future size and strength. Obviously, a fund must strike a careful balance in its credit standards, the extent of its loan subsidy, and its intended pace of capital growth.

CONCLUSION

In conclusion, while the creation of a government sponsored enterprise is the preferred approach to creating a secondary market, NAHB realizes that Congress is reluctant to adopt such legislation. For this reason, NAHB supports the application of SMMEA to infrastructure bonds and loans as the best alternative. Conferring SMMEA benefits to infrastructure finance will not guarantee the creation of a secondary market, but simply stated, will remove the obstacles toward creating one. NAHB urges the Subcommittee to relay its support for legislation applying SMMEA to infrastructure loans and bonds to the relevant committees of jurisdiction.

ADDITIONS TO THE RECORD

AIRPORTS COUNCIL INTERNATIONAL

"The Voice of Airports"

Written Statement of the

Airports Council International - North America

on

Passenger Facility Charges and Airport Privatization

Before the Subcommittee on Investigations & Oversight
House Public Works and Transportation Committee

July 13, 1994

WRITTEN STATEMENT SUBMITTED FOR THE RECORD OF THE AIRPORTS COUNCIL INTERNATIONAL-NORTH AMERICA ON PASSENGER FACILITY CHARGES AND AIRPORT PRIVATIZATION - JULY 13, 1994

Mr. Chairman and Members of the Subcommittee:

The Airports Council International - North America (ACI-NA) represents the local, state and regional governing bodies that own and operate commercial service airports in the United States, Canada and Bermuda. ACI-NA member airports service more than 90 percent of the U.S. domestic scheduled air passenger and cargo traffic and virtually all U.S. scheduled international travel.

We welcome this opportunity to present the views of our respective members, the airport operators across the country, regarding the Passenger Facility Charge Program and the privatization of airport facilities.

From the earliest days of aviation, local governments have had the primary responsibility for developing, operating and financing our country's commercial service airports. Today, the air transportation system is the linchpin of our national and local economies, essential to the safe transportation of people and goods, both domestically and internationally.

Airports also support local economic development by providing complete transportation services, stimulating business activity and investment and creating jobs. Airports must generate revenue for their particular operations to be self-sufficient, usually without the general tax revenues enjoyed by other public enterprises. They must operate like cities within cities, providing their own police and fire protection and their own public works. Airports must perform all these services efficiently, unobtrusively and with as little impact on the environment as possible. This has become increasing challenging in recent years.

INCREASED INVESTMENT IN AIRPORT INFRASTRUCTURE CAPACITY IS VITAL TO THE NATIONAL AND LOCAL ECONOMIES AND AIRLINES' HEALTH

Investing in our aviation infrastructure is critical to provide the facilities that airlines and the air transportation system depend upon now and will need in the future. Airport ground access and air traffic delays are still with us, despite the temporary downturn in the economy:

- Currently, 23 airports suffer 20,000 hours of delay or more per year, costing the airlines at least $32 million in delay costs at each airport, according to the FAA. If nothing is done to increase system capacity, the FAA forecasts that the number of seriously congested airports (those with 20,000 hours or more of annual delays) will increase to 33 in less than ten years -- a daunting increase.

- At the top 100 airports, passenger enplanements are forecast to increase from 452 million in 1991 to 861 million by the year 2005, a 90% increase over the 15-year period of the FAA's forecast, and average of 6 percent annual growth.

This growth in demand will place a tremendous strain on the existing airport and airspace system, and will require a renewed commitment to expand system capacity. Despite the temporary lull in air travel demand in the United States, growth will resume, and we are now beginning to see positive signs. Even if the growth is more modest than projected, greater effort to increase capacity is fully justifiable in light of the score of airports already burdened with serious delays and delay costs. We cannot afford the billions of dollars in annual delay costs to the airlines and air travelers that are caused by an inefficient and inadequate air transportation system.

We believe that the local and state and government airport operators, with federal government support, have the responsibility to look long-term, plan, finance and build not only the airport facilities needed today, but also those which will be needed in the near and long-term. It should not be surprising that airline management - especially given the current operating environment - look to the short-term, the next quarter, or in the case of some carriers in bankruptcy, week-to-week.

Investment in airport development fosters not only a competitive, efficient and growing air transportation system. It also contributes to economic revitalization and growth throughout the country, creating jobs and wages, new business activity, better air service and opportunities for healthy competition. For each $1 billion invested in airport development, approximately 40,000 to 50,000 jobs are created and sustained, with related multiplier spending and tax revenue benefits for localities, states and the federal government. As an indicator of the economic engines airports have become, airports serving the 30 largest metropolitan areas generate annually more than $250 billion in economic activity, more than $80 billion in wages, and nearly 4 million direct and indirect jobs for their local economies and residents. ("The Economic Impact of Civil Aviation and the U.S. Economy," Wilbur Smith Associates, June 1990. Prepared for the Air Transport Association and the Partnership for Improved Air Travel.)

With the focus on federal deficit reduction and economic revitalization and growth, ways must be found to create jobs, ensure a sound general economic recovery, and foster a healthy and growing transportation system. Investment in our nation's airports, through federal and local user-funded capital development programs, will return enormous dividends to citizens, travelers, and shippers, as well as to airlines and other businesses that provide or depend upon aviation services.

PASSENGER FACILITY CHARGE PROGRAM

Three years ago, Congress enacted a landmark bill authorizing airports to raise capital development funds directly from air passengers by imposing modest passenger facility charges (PFCs) on travelers using the airport. This was done to help bridge the gap between annual airport capital development funding needs exceeding $10 billion annually -- per an updated estimate, presented last year, of airport capital development needs based on a nationwide survey of airport and FAA review and confirmation -- annually and inadequate appropriated federal funds available from the Airport Improvement Program (AIP).

The PFC program has begun to help bridge the gap, but the program has been in operation only a short time. The first ten airports which received FAA approval have not been collecting PFC revenues for two years yet. As of July 1, 1994, the FAA had approved 205 applications to impose PFCs at 188 locations. The total revenue that will be raised over the life of the various collection periods is approximately $9.4 billion. In 1993, airports collected $486 million in PFC revenues. FAA forecasts that in 1994 PFC revenues will be $750 - $800 million. By 1995, FAA forecasts that PFC revenues may reach $1 billion a year, assuming that 85% of large and medium hubs are participating. Presently, 65% of large and medium hubs are imposing PFCs.

Of those 188 locations, 18 are large hubs with an average collection period of 9 years for a total of $6.7 billion. Six of the top 10 airports currently have PFCs, and 3 of the 4 remaining have applications pending, have had a consultation, or indicated interest. Twenty-four locations are medium hubs with an average collection period of 7 years for a total in excess of $1.5 billion. Forty-two locations are small hubs with an average collection period of 9 years for a total of $962 million. 101 locations are non-hub airports with an average collection period of 6 years for a total of $131 million. There are three small commercial service airports with PFCs collecting a total of $314,795 for an average of 6 years.

As of June 1994, excluding the Denver International Airport, 37% of the PFC funds collected at airports were for landside projects including terminals, land acquisition and security. Fifteen percent of the funds are being used for roads, including people movers. Eighteen percent of the funds are for airside projects including runways, taxiways, aprons, planning, equipment and lighting. Noise projects account for 10 percent of the total.

Preliminary results, announced last month, of a new ACI-NA survey of airport surface access needs indicate that during the next five years airports across the country are planning to use PFC revenues to help fund numerous capital improvement projects aimed at reducing traffic congestion and increasing road access capacity. Large-hub airports revealed they anticipate funding 10%; medium-hub airports revealed they plan to fund 39%; and, small-hub airports aim to fund 10% of future landside projects through PFC revenues.

AIP entitlement turnbacks from those large and medium hub airports imposing PFCs are expected to provide $105 million for the Small Airport Fund. In the first year, 1993, the "turnback" total was $57 million.

PFCs are critical to provide airports with the financing tools and greater independence to respond to the air traffic and expansion needs of the airlines and the air service needs of the air travelers and communities they serve. PFCs are building worthwhile projects -- those that preserve or enhance safety, security and capacity, reduce noise impacts, or enhance competition among air carriers. Since a PFC is a local charge that can only be applied to local airport projects, the PFC program enables airports to respond to the demands and needs of their communities and the air travelers who rely on the airport.

In addition to airside projects, such as runways and taxiways, PFCs are being used by airports to effectively address long-neglected and underfunded needs for noise mitigation for neighboring communities and residents, terminal improvements and expansions, ground access projects to relieve congestion for travelers getting into and out of the airport, and the expansion of gates to increase air service for their communities and expand competitive opportunities for the airlines.

Airports can not undertake projects that communities and air travelers need, which other wise could not be funded because of limited AIP funds or a lack of support from the airlines because of their financial constraints or because they do not view the project to be in their interest. Airport operators and airlines will not always agree on the need for, scope or timing of a particular airport development project or program. Often, the individual tenant airlines at an airport will not agree among themselves about development priorities. This is understandable, since they are competitors and each has its individual corporate strategies and preferences. This is precisely why the AIP and PFC programs are so valuable. Airport operators are the public bodies entrusted with developing the infrastructure serving all elements of the air transportation system. AIP grants and PFC programs enable them to proceed with needed development without first obtaining approvals from competing and diverse airline companies.

PFC-funded projects are also creating jobs and stimulating business investment and opportunities for the airlines and many other airport-related business. PFCs have been critically important this year, given only a short-term AIP program to date, to help many airports proceed with funding for projects. Without PFCs, many projects would go unfunded or would be delayed. The long-term capacity improvements and benefits they provide would not be available when the airlines and traveling public need them, and the jobs and economic benefits they provide would not be available now when the nation's economy needs them.

AIRPORT PRIVATIZATION

Airport privatization can vary in both form and content. Many aspects of privatization have already been incorporated in the managing and operating structure of U.S. airports, including airport management contracts, airport concession agreements, private contractors for services and independent public authorities. There are many advantages in pursuing privatization including:

- **Efficiencies of operation.** Private operation could result in management and operating efficiencies, thus, reducing costs. Such efficiencies could stem in large measure from relief from certain government regulations.

- **Entrepreneurial responsiveness.** Private operation could result in a more "bottom line" approach to planning and decision-making. Market opportunities could be consistently sought out and pursued.

- **Facilitates sponsor compensation.** Private operation could facilitate the compensation of the sponsoring governmental entity for its past investment and its need to obtain a portion of airport profits or income.

- **Clear definition of financial and operational obligations.** Private operation controlled by a contract could ensure a clear definition of the financial and operating obligations of the parties. By establishing these arrangements through commercial contracts, as opposed to political understanding, the long-term financial status and exposure of the airport could be more firmly set.

- **New sources of capital.** Private operation could enable new and non-traditional sources of capital to be tapped. This could expand the opportunities for financing of capital development.

Given these benefits, there are some disadvantages associated with airport privatization including:

- **Higher costs to users.** Private operation could, if accomplished through a purchase or lease, substantially increase the debt service or operating costs resulting cost increases to airport users, including airline passengers and shippers.

- **Less public accountability.** Private operation could reduce the extent of public accountability, thus, decrease services to the public that are not commercially justifiable. Programs that benefit the surrounding community and the environment may be delegated to subordinate status.

- **Control of capacity.** Private operation could be less inclined to invest in major capital development and expansion programs until present capacity is fully utilized. Constraints on the overall aviation system could result.

- **Conflict with local policies and priorities.** Private operation, with primary emphasis on profit maximization, could result in policies and priorities that are at odds with those of local and regional planning and economic development agencies.

- **Loss of legal and tax advantages.** The outright sale of an airport to a private company could jeopardize many of the legal and tax advantages enjoyed by publicly-owned airports, including tax-exempt financing and AIP eligibility. The loss of these benefits could increase the costs at the airport.

Some of these concerns might be satisfactorily addressed in contract between the airport sponsor and the private operator. As no two airports are identical, each airport must make its own analysis of the potential pros and cons of privatization and determine the best mix of public and private involvement for its own unique situation.

Thank you Mr. Chairman for allowing us present the views of the airport community on the Passenger Facility Charge Program and airport privatization.

Washington State
Department of Transportation
Sid Morrison
Secretary of Transportation

Transportation Building
P.O. Box 47300
Olympia, WA 98504 7300

July 13, 1994
Congressional Hearing
Subcommittee, Investigations and Oversight
Infrastructure Financing

Mr. Chairman and Members of the Subcommittee—

My name is Jerry A. Ellis and I am the Director of Freight Mobility and Economic Partnerships for the Washington State Department of Transportation (WSDOT). My duties include the development and implementation of the Public Private Initiatives in Transportation Program.

I appreciate the opportunity to provide this statement regarding our program. I regret that budget driven travel restrictions and the current critical phase of our program implementation does not allow me to appear before you. I will, of course, be available to communicate with you and your staff should some follow-up be desired.

There are many who have asked why Washington State, tucked up there in the Pacific Northwest, saw a need to search for new ways of financing transportation infrastructure...finding innovative means to supplement traditional funding sources.

Since 1970, the state's population has grown by 45% while the number of registered vehicles has doubled and the vehicle miles traveled has increased by approximately 109%. This accelerated growth has resulted in what some studies say--makes Seattle the 6th worst area of traffic congestion in the country.

Our population growth projections indicate that we will experience at least a 10% growth in our population within the next decade and that 90% of this growth will occur in counties straddling the I-5 corridor.

A study in 1989 concluded that 54% of the interstate and other freeways in the Puget Sound urbanized areas were "extremely congested" which means the peak period traffic volumes were beyond the capacity of the freeway.

In 1984, 70% of all our bridge decks on state highways were rated as "good" and only 7% were rated "poor". In 1993, there were only 44% of our bridges rating "good". Significant funding will be required to keep the state's 2,500 bridges in working condition to handle the traffic volume.

A ferry fleet of 25 vessels carries 21 million passengers and 9 million vehicles per year. A 23% growth is expected in the next five years.

A regional transit project is envisioned for the Puget Sound four county region, involving a completed HOV lane system, light rail and increased transit service, with a price tag estimated to be about $10 billion for the total plan.

While each state's recitation of its transportation needs may vary by specifics, each has in the global view, similar and significant demands with shrinking financial resources. It is my understanding that several states have enacted some type of legislation enabling public private partnerships. These include the states of California, Virginia, Minnesota, Arizona, Florida, Texas, Puerto Rico, and Washington. I am also aware that others (Illinois, New Jersey, Georgia, Massachusetts, Delaware, and Maryland) are vigorously investigating or in some cases may have passed legislation.

In 1993, Washington State lawmakers unanimously approved Substitute House Bill 1006 creating our New Partners Public Private Initiatives in Transportation Program. This was the culmination of two years of research and deliberation to design a program based on the best information and expert advice, but yet tailored to the needs and culture of Washington State. The advice, counsel and assistance of diverse interests was sought and used in formulating the program. Perhaps this effort can best be characterized by the fact that not only did the enabling legislation pass unanimously, passage was supported by the following organizations: Association of Washington Business; Association of General Contractors, Quadrant Development Corporation; Washington Trucking Association; Home Realty Inc.; S.W. King County Chamber of Commerce; Washington State Transit Association; International Federation of Professional and Technical Engineers Union, Local #17; Washington Federation of State Employees; Valley Area Transportation Alliance; Washington Transportation Policy Institute.

New Partners provides transportation investment and development opportunities for the private sector and will test the feasibility of privately financed transportation capital improvements in Washington State. The program goals include:

- Providing benefits to both the public and private sectors.
- Providing a sound economic investment opportunity for the private sector.
- Providing the state with increased access to project development and financing opportunities.
- Supplementing the state's transportation revenues, allowing the state to use its limited resources for other needed projects.
- Encouraging and promoting business and employment opportunities for Washington State citizens, and
- Implementing the program in cooperation and consultation with local jurisdictions of the state.

As the nation's next test of a state's ability to attract private investment in transportation infrastructure, SHB 1006 provides an excellent opportunity to examine and apply the concepts and principles embraced in ISTEA and currently being contemplated by federal legislative and executive bodies.

The following are some of the key elements of the Legislation:

- WSDOT authorized to solicit proposals from the private sector and select up to six projects. The projects are identified by the proposer.
- Authorizes a private developer to undertake all or a portion of the planning, design, financing, construction and operations of transportation systems or facilities.
- Focused on capital-related improvements and additions including, but not limited to, highways, roads, bridges, vehicles, equipment, marine-related facilities, park and ride lots, transit stations, transportation management systems and other transportation related projects.
- All projects will be consistent with plans, rules, regulations and statutes governing state transportation projects.
- WSDOT authorities and assets may be used including rights of way, airspace, real property, exercise of eminent domain, development rights, permits, protection from competition, default remedies, etc.
- Agreements will be negotiated for each project and include provisions to protect the project revenues and limit the state's liability. The agreements will also establish a maximum rate of return on the private investment.
- Projects will be owned by the private sector during construction, turned over to the state, and leased back for operations for up to 50 years.
- Federal, state, and local financing may be used including grants, loans, letters of credit.
- Authorizes leveraging of Federal ISTEA funds, including the use of any revolving loan funds.
- User fees, tolls and other cost recovery mechanisms may be imposed.

- Authorizes leveraging of Federal ISTEA funds, including the use of any revolving loan funds.
- User fees, tolls and other cost recovery mechanisms may be imposed.
- Incentive rates of return may be established for safety, performance or transportation demand management goals.

On May 13,1994 project proposals were submitted to WSDOT by private sector consortiums. The concept proposals total 14, proposed by 11 teams and represent proposed investment of $4.8 billion. These proposals are currently under review and evaluation and thus I am not able to discuss proposal specifics at this time. I am pleased to inform you however, that the proposals involve new facilities as well as major reconstruction activities. In addition to highways and bridges, the proposals address marine and transit related facilities.

The selected public private transportation projects will each have a unique financing plan, involving a range of innovative financing tools and instruments. While the emphasis in project funding is from private sources, Washington has also successfully pursued the availability of public funds for the selected project as well. Given that very few major transportation improvements are 100% privately financable, Washington's law authorizes the use of federal, state and local funding.

This year, the legislature unanimously approved the sale of up to $25 million in general obligation bonds to provide state financial participation in selected public private transportation projects. A state revolving fund is established to provide loans or other financial contributions.

Washington's law also encourages the WSDOT to take advantage of new opportunities provided by federal legislation under ISTEA Section 1012 to maximize the funding and financing of the projects. However, the ability of the state to divert existing federal funds from approved projects to another purpose is as politically difficult at the state level as it is at the federal level.

Each of these proposals is currently undergoing a thorough technical and financial investigation and evaluation. These evaluations and the resulting reports are being developed by a interdisciplinary team of WSDOT engineers, planners and budget experts assisted by a financial consultant firm. These reports along with presentations by the proposers will be used by a separate Project Review Board (composed of transportation, general government, finance and public policy experts) to render a judgement on each proposal and recommend to the Secretary up to six proposals. With the concurrence of the Secretary, the Washington State Transportation Commission, a citizen board, will be requested to approve the projects for advancement to negotiation of agreements. The present schedule will have these steps completed by mid-August.

Beginning in September and hopefully concluding by the end of this year, individual agreements will be negotiated between WSDOT and the private developers. These agreements will address development rights, financing, schedule, operations, oversight, etc. We contemplate the commencement of project development on proposals that have executed agreements in January of 1995.

Washington's Public Private Initiatives Program is about leveraging public funds by attracting private investment in transportation infrastructure. It will test the feasibility of privately financed transportation facilities. This program is designed to attract private capital by establishing a legal framework that allows the state and the private developer to gain benefits and to share risks.

Because the program is truly a "work in progress" in fact still in its early development stage, I can not provide specific insight or recommendations as to actions that could be taken to assist in the furtherance of ours or similar state programs.

It is clear however, that there will be a opportunity for significant contribution by the federal government. These opportunities will lie in three key areas.
1) Flexible financing mechanisms including refinements to Section 1012 of ISTEA. 2) The ability to mitigate or eliminate procedural barriers. 3) Vesting in USDOT and its client states the authority to pursue innovative demonstration programs for the development and financing of transportation infrastructure.

As we move through the various phases of our effort, I will be happy to share with you and your staff the results and experience gained that may be of benefit in determining the efficacy of private financing of transportation facilities, appropriate roles and responsibilities of the various levels of government and the private sector, and how we might together continue the development of innovative approaches to meet our nation's infrastructure investment needs.

Thank you.

BERNARD W. POIRIER

BUREAU :
100, AVENUE DE SUFFREN
75015 PARIS
FRANCE

Paris, 12 July 1994

FAX to: The Honorable Robert A. Borski
U. S. Representative from Pennsylvania
Chairman
Subcommittee on Investigations and Oversight
Committee on Public Works and Transportation
U. S. House of Representatives
Washington, D. C. 20515

Care of: Jack Wells
Majority Staff Director

Re: July 13th Hearing
INFRASTRUCTURE FINANCING

Dear Mr. Chairman,

I have just learned of your final hearing in infrastructure needs of the United States.

Last November I addressed the Urban Land Institute on this very issue at ULI's Fall Conference in Boston, Massachusetts. I feel a copy of these remarks should be in your record because they were directed at the core issue of infrastructure financing.

There are only a few on-going "privatization" projects in the United States. They are really concessionization projects, wherein a public concession is accorded to a private body to exploit a public asset. The word "privatization" clouds the investment issue when dealing overseas.

I have been involved with every foreign participant in toll road privatization, whether as equity players or lenders, in the U.S. projects now under construction; and for quite a few around the United States that appear desirable to the Governors or the Washington delegations of these states.

The core issues are :

1° A foreign equity pool.
2° A form of Federal insurance for the ramp-up period.
3° Fair tax applications to both domestic and foreign equity participants. No double taxation.

There just is not enough domestic venture capital available to drive all the potential "privatizations" in the United States.

Respectfully yours,

TÉL. (33) (1) 42 78 42 40 - FAX (33) (1) 42 78 42 39

Adresser toute correspondance :
Steeple - Contrée sarl
18, avenue Victor-Hugo - 75116 PARIS - France
Tél. (1) 44.28.18.00 - Fax (1) 44.28.19.00
Telex 640047 F

New address since April 1, 1994:
100 avenue de Suffren
75015 Paris
Tel:(33 1) 42 75 42 40
Fax:(33 1) 42 75 42 39
or 42 75 42 42

Steeple-Contrée

Remarks prepared by

Bernard W. Poirier

November 4, 1993

Fall Conference of the Urban Land Institute

Boston, Massachusetts

Panel on Public Investments for Future Growth
Real Estate Development Session

Panel moderators Lynne Sagalyn and Greg Hummel, fellow panelists, ladies and gentlemen.

My focus today is to identify a pool of foreign cash equity to help privatization financing earlier and for development projects that are offshoots of privatization. These are pools of equity and not sources of long-term capital about which I spoke yesterday at the International Council.

What I call privatization projects are those that have traditionally been sponsored by public entities. These could be toll roads, toll tunnels like the private one opened on September 17th in Marseille, France, or even apprenticeship institutes and campuses where a military base will close or a free trade area where a naval base is to be closed.

Examples of offshoot programs are a new transit-based community development with direct access and egress from a privatized toll road, such as when a developer may swap a right-of-way to the toll road promoters; or a regional commercial and business center.

It is important to note that when foreign investors have invested in a privatization project they would be inclined to support its second-tier development. Overseas venture capitalists have a cradle-to-grave attitude when it comes to looking both upstream and downstream to exploit opportunities.

In my view there is an available pool of venture cash overseas to meet 40% of all cash equity and guaranty needs for at least $50 billion in viable privatization projects in the United States over the next four years. These are projects that could stand-alone without asking for special tax incentives or whatever. While such extras might help, privatization must work on its own business merits and be supported by a valid certificate of authority.

Let us examine this pool of foreign venture capital and what competitive elements all American developers must beat in order to tap into the pool.

Firstly, there are the thousands of very wealthy foreign families with annual disposable incomes of over $25 million. Most have little participatory venture capital in the U.S.A. Secondly, there are the financial institutions, most under local government control or influence, but with huge sums of investment capital available.

Thirdly, there are investment institutions whose existence is to place investment funds in new ventures, but they are often sensitive to political or diplomatic overtures. Lastly, you have the broker pools or venture capital pools which are so fee-driven today that they can become deal-breakers. As regards the latter, there is so much quick money available in the regulated but unorganized overseas market that your 20+% internal rate of return on equity capital is not worth their while early in your structuring.

We must explore the methods to overcome these barriers in order to tap into the pool. I will discuss this after identifying our domestic context, as seen by a potential equity investor abroad.

Privatization projects must be protected from unfair competitive programs throughout the length of the authorized period of exploitation. Obviously a state Certificate of Authority is needed, but because of sovereignty issues negotiating satisfactory terms takes a long time. All this fledgling industry needs is another example or two of the Chicago Skyway fiasco to cloud privatization. In the Skyway example two interstate highways serving similar traffic were built after the Skyway opened. There were also claims of receipt-skimming.

Secondly, privatization projects need the approbation of all local and county governments affecting the project and its success. This is a time-consuming and expensive educational process, apt to draw heavily on development capital and extend beyond the political terms of key officials who may be replaced.

Consequently, the project must have solid business foundations and be as apolitical as possible. Because privatization answers a civic and social need, it should enjoy bipartisan support.

Lastly, and I think this is the key to overseas investors, it should pass all regulations of the Securities and Exchange Commission and all the due-diligence reviews of the project's lenders.

The United States has the best regulatory review process in the world. This helps to establish the "comfort zone" for foreign investors. There is less chance for fraud. As an American businessman overseas I can assure you that stories of someone being taken by the so-called "American deal" are legendary.

Real or not they are often repeated. You cannot ignore the elements comprising the "comfort zone" which include fundamentals like language, use of expressions, cultural heritage, and even the focus and the format to present a proforma.

Nonetheless, the promoter's best friend is the reputation of a stable United States despite partisan political changes. Foreigners perceive a uniform value of character in Americans that exists no where else in the world. Most foreign languages do not have a word for "patriotism" as you and I know the word, nor for the words "civic pride" that everyone in this assembly understands. Another notion we have is "thoughtfulness" as we might attribute it to one another. Like asking directions, as the American answers, "I'll take my car-follow me" to make it easy and to avoid difficulties of the route to follow. This word "thoughtfulness" often has no equivalent in many other languages; although it is a common trait of Americans.

Often a foreigner will tell another, "you must travel off the beaten path to really appreciate America". Our reputation has engrained into their minds the attractiveness of what they call "deep America". What is attractive about privatization is the fact it is Deep America. The project can be in Indiana, Missouri or New Mexico - under a state's authority and this is especially attractive.

"Come day, go day, God send Sunday" - the U.S. states are going to be there no matter what happens in Bosnia, Somalia and Haiti. We Americans enjoy what no other people enjoy and that is the reputation for security. It is for this same reason people invest in Treasury Bills despite the poor return when twice as much can be earned in conservative obligations abroad.

I have summarized the desirability of tapping the foreign venture pool. The idea of a central collecting point of this equity for developers to tap is being studied at the White House. And White House sources have assured me that cabinet officials have been instructed to study such a plan.

A central pool would make it easier for developers of privatization to fill their equity needs and it would facilitate access to more long-term capital options. There would be no fees, no commissions, no language barrier and the bottom line, a bankable equity commitment would be available much earlier in the structuring of your privatization venture.

In my model, every tranche of $10 million in foreign equity can help leverage over $90 million in project financing in today's marketplace. I have arbitrarily capped the central foreign equity pool at 40% for many domestic and foreign reasons.

We can discuss any points of interest to you during the question period.

Thank you.

-END-

[Subsequent to the hearing, Representative Borski had additional questions for the witnesses. Their responses follow:]

New York State Environmental Facilities Corporation
(800) 882-9721 Within NY State (518) 457-4100
FAX: (518) 485-8773

TERRY AGRISS
President

August 25, 1994

Honorable Robert A. Borski
Chairman
Subcommittee of Investigations
Committee on Public Works and Transportation
Room 2165
Rayburn House Office Building
Washington DC 20515

Dear Congressman Borski:

Thank you for your letter of August 2, 1994, which posed several questions to the Council of Infrastructure Financing Authorities (CIFA) regarding infrastructure finance and particularly the State Revolving Funds (SRFs). We will respond to the questions in the order you presented them.

(1) What are the disadvantages of using state revolving loan funds to finance infrastructure projects?

Generally, we believe that there are no disadvantages to using state revolving loan funds (SRFs) to finance infrastructure projects. However, some have argued that using the revolving loan mechanism to finance infrastructure works well only for economically stable medium and large sized municipalities, whose residents can afford the user fees necessary to generate the repayment stream for the loans. Experience has shown us that small and even "non-rated" municipalities can take good advantage of SRFs. For municipalities with severe economic hardships that cannot afford to repay even an interest-free loan, SRFs can still be used as a basic financing tool. As I discussed in our testimony to your Subcommittee last month, by using a concept which we call "principal subsidy," (where part of the principal repayments are subsidized from interest earnings in the loan fund) small, economically distressed communities would be able to develop and implement economically viable water pollution control projects and realize substantial savings while allowing the money to be kept within the loan fund and available to make other loans in the future. Extended loan repayment periods, up to 30 years, will also help make these loans more affordable to smaller, economically disadvantaged communities.

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(2) What needs to be done to increase the flexibility of SRFs?

SRFs are already quite flexible. However, they would be even more flexible if certain restrictions in the Clean Water Act were repealed to allow the states more discretion in how the SRF money is spent. For example, many of the Title II "cross-cutter" requirements are excessive and inefficient and frequently duplicative of comparable state requirements. In addition, it would be helpful to have land acquisition be eligible for SRF financing and to have extended debt service schedules and principal subsidies authorized for economically distressed communities.

(3) What changes are needed in the Title VI provisions of the Clean Water Act to make SRF programs more efficient?

In addition to the items in the previous answer, the most important thing that can be done is to reauthorize the SRF program to take care of unmet needs.

(4) Has there been coordination among the Federal, state and local officials responsible for infrastructure to develop new infrastructure financing mechanisms?

Speaking only to environmental infrastructure, I believe that organizations like CIFA have played a crucial role in bringing together Federal, state and local officials to discuss the future of infrastructure funding. There have also been recent attempts to coordinate the various programs on the Federal level (e.g., EPA, HUD and Agriculture have held joint meetings on the funding of rural water and wastewater projects). As I explained in my testimony, the SRF mechanism represents the single best innovation in federal capital financing in recent years. The application of this mechanism to other infrastructure financing has great potential and should be explored.

(5) What is your opinion of a "national infrastructure corporation" to assist state and local governments with their infrastructure investments?

We believe that the current municipal finance market works quite well in supplying capital to municipalities. The need to create another government-sponsored enterprise to enhance this market is questionable, although there is a possibility that a national infrastructure corporation could be helpful in assisting some privatized infrastructure financings. On balance, though, we question whether the cost of a new financing corporation would be worthwhile.

(6) What is your opinion on the creation of an "Interstate Financing Corporation?"

As I understand the Rohatyn scheme, the bonds would be taxable in order to be attractive for pension fund investment. This would increase the cost of doing business for the states, who have traditionally paid tax exempt rates. Such a corporation might be useful for

financing cross-border infrastructure systems, though adjoining states have had a proven track record of cooperation in addressing these needs even without such a corporation.

(7) What is your opinion of the creation of a state water and wastewater trust fund?

Although we are not intimately familiar with the details of the proposal, any attempt to divert a stream of revenues, such as user fees, to create a new financing mechanism will undoubtedly have a negative impact on the SRF's ability to finance projects, absent additional revenues. Likewise, it is questionable whether any real public purpose is served by a scheme that siphons off user fees that would otherwise go towards capital investment and operation and maintenance into a centralized federally operated fund for redistribution to states or localities. The use of the highway trust fund for deficit reduction purposes is an example of what could happen to such a fund.

(8) Do you believe a separate capital budget would help the Federal government provide funding for infrastructure improvements?

Absolutely. Under current federal budget practices, funds used for current year operations are treated the same way as funds used for investment purposes such as building roads, bridges and water treatment plants. This budget treatment makes the long-term commitment of funds to programs like the SRF subject to the same type of budget competition as current year expenditures. With a capital budget in place, these long-term capital investments would be accounted for over a longer period of time as is now done by most states and localities.

(9) How do we ensure that innovative and alternative financing methods will be used in all areas and not just those areas that can afford them?

The current SRF program has enough flexibility to allow for just such an even distribution of innovative and alternative financing methods, and, in fact, smaller, less economically well off communities are most in need of such innovation and flexibility. These innovations could be enhanced by the program changes discussed above (e.g., principal subsidy program).

I hope that these answers have shed some light on your questions. Thank you again for the opportunity to testify. Please call me or Jim Smith, CIFA's Executive Director, if you or your staff have any additional questions.

Sincerely,

Terry Agriss
President

Responses to Questions
Submitted by Congressman Borski
to Michael B. Cook, EPA
From the July 13, 1994 Hearing
Concerning Innovative Financing of Infrastructure
Before the Subcommittee on Investigations and Oversight
of the House Committee on Public Works and Transportation

Question 1.

In your testimony, you cite 47 demonstration projects that were sponsored by EPA. How many of these actually involved the construction of infrastructure, as opposed to non-infrastructure projects such as recycling partnerships?

What did you learn from these 47 demonstration projects? Did they indicate the need for statutory changes or new administrative procedures on EPA's part?

Answer. Nine of the demonstration projects involved construction of infrastructure. The demonstration program grants did not, however, actually fund construction in any project. The grant funds went to providing communities and the other recipients with the finance, legal, planning and engineering technical assistance needed to implement the partnership and/or project.

Lessons Learned to Date from the Demonstration Projects Include:

- The type of financing selected must be carefully tailored to the needs of the specific community
- States and localities need additional targeted technical assistance with regards to finance. Such assistance can best be delivered by a regional self-sustaining program delivered by institutions such as colleges and universities. A prominent example is the Agency's Environmental Finance Center network discussed under Question 3.
- Public goals can frequently be met by working with the private sector
- Regional cooperation between small communities is a viable way to meet regulatory and infrastructure demands
- Partnerships involving small communities often require multiple parties working in a collaboration with the private sector
- Small communities need more and better information to make environmental financing decisions

-- Federal and State subsidies remain the least costly financing alternative for many small communities

-- The tax code lacks incentives to private investment in public infrastructure

Statutory Changes or New Administrative Procedures Needed

The growing cost of meeting environmental and other mandates suggests that communities need access to every possible financing tool, public and private, if they are to succeed. No one tool or set of tools is necessarily right for every community. Government can best serve the financing needs of communities by not barring or favoring one approach, but by allowing communities the freedom to choose from the widest possible menu of options, including public-private partnerships. We have not thoroughly reviewed all of the demonstration projects to identify potential statutory or regulatory changes. We will consider changes based on the lessons learned, however, as part of the EPA's continuing effort to provide flexibility to small communities in meeting their environmental responsibilities.

It is clear that for EPA to succeed in its mission the Agency's State, local, and private partners must succeed in meeting environmental requirements by building needed infrastructure, delivering needed services, and executing needed programs. Finance or how-to-pay is a linchpin by which these actions are implemented and the desired environmental compliance achieved. To focus and support this effort, EPA maintains a multi-media Environmental Finance Program, as well as specialized expertise in media program offices. The Environmental Financial Advisory Board and the Environmental Finance Center Network are two additional facets of the Agency's overall approach.

One of our initial lessons learned has helped EPA identify a necessary change in the Clean Water Act (CWA). The CWA uses the term "publicly-owned treatment works" (POTW) for municipal sewage plants. If a public-private partnership results in a wastewater facility being less than fully publicly-owned, the permitting and regulatory status of the facility is uncertain. To resolve this matter, "President Clinton's Clean Water Initiative" for CWA reauthorization recommends defining POTW (for non-financial assistance matters) to include all wastewater treatment plants that serve the general public.

Question 2.

In your testimony, you said that EPA helped the state of Maine to set up special bond pool programs to help small drinking water facilities gain access to the bond market. Can you tell us how these programs were set up, how the communities participate, and how well these programs are working?

Answer. The purpose of this project was to create a bond pool among small private drinking water systems to enable them to come into compliance with the Safe Drinking Water Act (SDWA). A work group was set up that included the Maine Rural Water Association (MRWA), the Maine Public Utility Financing Bank and an underwriting firm. This group identified market requirements for the pool, examined financial impediments, identified risks and determined eligibility criteria for borrowing. They also identified potential pool borrowers.

Once potential borrowers were identified (22), the project moved slowly because systems had not decided how to comply with the SDWA and were uncertain about the affordability of costs even in a bond pool. In an attempt to lower costs, MRWA secured passage of State legislation allowing the bond pool to borrow under the aegis of the Maine Municipal Bond Bank. This allowed the pool to cut prospective interest rates by 2.25 percentage points.

Many systems also had difficulty in the entire planning process. The small companies did not know what type of compliance was needed and required considerable technical assistance. In response, MRWA provided an educational seminar for both private and public systems on complying with SDWA.

As the project progressed, seven companies realized it was more economically feasible to sell their assets and become public water entities than to finance improvements as a bond pool, even at tax-exempt rates. As public entities, they would be eligible for grants and low interest loans via the U.S. Department of Agriculture's Rural Development Administration (RDA). Public utilities also are eligible for Community Development Block Grants.

As of now, only two communities have applied for membership in the bond pool. In addition, MRWA is helping several small systems, public and private, secure financing for their compliance related projects. This financing will come through either the Bond Bank, RDA, or private lenders.

Question 3.

Is the environmental finance center network helping to promote innovative financing techniques? How?

Answer. Yes, one of the roles of the Environmental Finance Center (EFC) Network is to facilitate innovative financing among communities that are interested in it. The network has been established to leverage EPA'S limited financial outreach capabilities. Participating universities seek to train State, local and other officials with regard to environmental finance principles, techniques, and issues. Both traditional and innovative approaches are covered. They perform this function through:

- focused training courses developed by EFC covering special topics such as public-private partnerships;
- charettes or workshops where community leaders interact directly with panels of public finance experts;
- continuing education courses covering finance and related public policy topics (on campus);
- the development of community case studies involving environmental finance (with recommended actions); and
- direct technical assistance by EFC and other university professional staff (finance specialists, engineers, lawyers, etc.).

As a specific example, the University of Maryland Environmental Finance Center is currently developing a course for public officials that will cover innovations in environmental finance. This course will be based on lessons learned from the university's finance charrettes, EPA's Demonstration Project Program and the experiences of members of the Agency's Environmental Financial Advisory Board. Topic areas will include pooling techniques, securitization, public-private partnerships, credit enhancements, developments with fees, guaranty funds, etc.

Question 4.

In your testimony, you cited the importance of full-cost pricing for attracting private participation in water infrastructure projects. Are drinking water and wastewater treatment commonly priced at less than full-cost now?

Answer. In a 1991 report, Private Sector Participation in the Provision of Environmental Services: Barriers and Incentives, EPA'S Environmental Financial Advisory Board examined full-cost pricing. The Board cited a 1987 survey of major sewerage agencies [Association of Metropolitan Sewerage Agencies, Municipal Wastewater Treatment Facility Financial Survey (1987)] that indicated user fees covered about 60% of operating, maintenance, and debt service costs. Fees were more likely to cover operations and maintenance costs (78%), than debt service for capital costs (38%). Large jurisdictions were more likely to cover costs with fees than small ones. Costs not covered by user fees typically are covered by general funds of the governmental entity operating the system.

In the same report, the Board referenced a 1984 survey of community water systems [Frederick W. Immerman, Final Descriptive Summary -- 1986 Survey of Community Water Systems, for EPA Office of Drinking Water] that found that the revenues of many public systems did not meet operating and debt service expenses, while those of most private ones did. However, both public and private providers averaged deficits when serving small communities. We do not have more recent data, but anecdotal evidence leads us to believe the numbers likely remain much the same as these studies show.

It is important to realize that even users who pay fees adequate to cover all operating and debt service expenses may not truly be paying for the full cost of service. The significant Federal and state subsidy programs (especially the construction grants program for wastewater) that are funded by Federal and state tax revenues have lowered the overall cost of capital for projects. In essence, while the full cost to the city to build and operate the system may be covered, the true cost to the ultimate users is hidden.

Question 5.

Are there any potential problems, such as the creation of monopolies, that may result from the privatization of infrastructure facilities or services?

Answer. We do not believe that public-private partnerships for water infrastructure will "create" monopolies. Drinking water and wastewater treatment systems are classic "natural monopolies" whether they are owned by public or private entities. The critical matter is adequate accountability to users and oversight by some governmental authority. This can effectively be accomplished through public utility commissions or contractual arrangements with the communities being served. Further, the interjection of competition among many potential private partners bidding to join a public-private partnership minimizes the monopoly status of the system to a level less than that of a fully publicly-owned system.

Question 6.

How can we make sure that the funds induced by innovative or alternative techniques adds to, rather than substitutes for, existing financing resources?

Answer. This is a critical issue for the many parties proposing new infrastructure financing initiatives. Some substitution will occur over the long term as projects make use of innovative and alternative techniques that better suit their financing needs. Such substitution is desirable in that it leads to more efficient investments in infrastructure. The question we face is how to ensure that new initiatives result in "more" as well as "better" infrastructure. The EPA is currently looking into this issue along with other agencies as part of the Administration's review of innovative financing for infrastructure investment.

For environmental infrastructure in particular, the "stick" may be as important as the "carrot." A vigorous enforcement program by EPA and the states will ensure that communities invest in the necessary infrastructure and that they make good use of all of their financing alternatives.

Question 7.

How do we ensure that innovative and alternative financing methods will not simply target projects to those who can afford user fees and continue to neglect the infrastructure needs of those who cannot afford these user fees?

Answer. As implied in the question, most proposals for innovative and alternative infrastructure funding are based on project finance supported by user charges. Many of the proposals are designed to facilitate private investment in public-purpose infrastructure. Private investment will occur only when the project provides a reasonable expectation of a return on the investment given the risks. Communities suffering real affordability problems are not good candidates for such innovative structures.

Some disadvantaged communities simply will need increased subsidies from the Federal and state government. The Administration has recognized this and as part of President Clinton's Clean Water Initiative has proposed providing "negative interest rate" loans or similar subsidies through the State Revolving Fund program. This truly innovative proposal is intended to assist those whose infrastructure needs have been neglected by existing funding programs.

Even a program that provides new financing opportunities only to those who can afford to pay the full cost of service through user charges may benefit those who cannot by freeing-up limited subsidy funds. Making direct Federal subsidies available only to communities who otherwise could not afford to develop infrastructure while facilitating private investment in facilities that can provide a reasonable return on investment would ensure that the needs of all are assisted and also would help to make sure that new investment, rather than substitution, would occur.

Question 8.

What can be done to encourage the development of public-private partnerships?

Answer. We are finding that local governments are on the leading edge of developing public-private partnerships for environmental (and other) infrastructure and services. It is critical for the Federal government to join our local and state partners in providing leadership for this important feature of "reinventing government." Perhaps one of the most crucial roles for the Federal government is to ensure that communities are not penalized for pursuing innovative partnerships. For example, a wastewater treatment facility that benefits from a public-private financing arrangement could fall under a different regulatory scheme than a traditional "publicly-owned treatment works" (POTW). The EPA permits POTWs under secondary treatment standards; a public-private facility may be subject to "best available technology" standards under some circumstances. Likewise, POTWs receive the "domestic sewage exclusion" (DSE) under the Resource Conservation and Recovery Act; it is not clear that a public-private works treating the same waste stream is eligible for the DSE. Removing these and other barriers that block or hinder communities that choose to enter innovative public-private ventures is necessary to demonstrate Federal support for public-private partnerships.

A lack of accurate and timely information regarding both the potential benefits and potential pitfalls of public-private partnerships often prevents communities from considering such arrangements. The Federal government should help educate communities about their partnership options by sharing stories of success and lessons learned from failures. The goal should be to replicate partnerships that work so that the "innovative" becomes the commonplace and traditional.

Question 9.

One critical need for our infrastructure is better maintenance of our existing infrastructure. How can innovative financing techniques help out with that problem?

Answer. Any innovative financing mechanism that brings the discipline of private investment decisions to public infrastructure will help to ensure proper maintenance of infrastructure. Private owners of infrastructure that do not have access to subsidy programs or general tax revenues must recover the true, full cost of operating and maintaining their facilities. Large, capital-intensive infrastructure projects inherently are long-term investments. Investors need to be satisfied that the assets continue to effectively operate and generate revenue streams. Owners whose "bottom line" depends on efficient operations are willing to invest in proper maintenance. Owners who continually depend on outside grants or other subsidies when the system needs capital improvements are less likely to maximize the life and performance of the assets through good maintenance. This incentive helps provide better maintenance of existing infrastructure that is operated by a public-private partnership.

We are not able to identify an innovative program that could be specifically targeted to funding infrastructure maintenance. Capital financing programs can, however, provide incentives or requirements that lead to better maintenance. For example, smaller communities often have difficulty in maintaining, as well as operating, drinking water and westewater systems. Regionalization or consolidation of small systems as part of privatization or contract management can bring in the expertise and economies of scale necessary to efficiently maintain the plants. Contract operations and maintenance of any size plant can contribute to better maintenance because a company that operates many plants throughout the country often has more expertise than an individual city system can acquire. Also, to the extent that innovative and alternative techniques provide funds for new capital construction, governments at all levels may be able to direct their limited infrastructure funds to improving maintenance.

Question 10.

Do you believe a separate capital budget would help the Federal government provide funding for infrastructure improvements?

Answer. We have no formal position on capital budgeting for the Federal government. We understand the intended benefit of such a process would be to clearly identify long-term investments as distinct from operating and administrative expenditures. Showing the costs of such investments as they actually occur over time may help the Federal government to provide a steady outlay of funds for infrastructure, but it would not eliminate the budget pressures that limit Federal funding.

Question 11.

The Infrastructure Commission has recommended the creation of a "national infrastructure corporation" to assist state and local governments with their infrastructure investments. What is your opinion about establishing such a corporation?

Answer. The EPA has not developed a position on establishing a national infrastructure corporation. The recommendations of the Infrastructure Commission are being reviewed by EPA and other agencies as the Administration considers options for infrastructure financing.

Question 12.

Mr. Rohatyn of Lazard Freres and Company proposed the creation of an Interstate Financing Corporation to help finance the nation's infrastructure needs. What is your response to his proposal?

Answer. Mr. Rohatyn has added an interesting idea to the list of proposals for increasing Federal financial support for infrastructure. We will review it as the Administration considers various concepts for investing in the Nation's infrastructure. The critical question to ask of all these proposals is "What does it do that cannot already be done through the financial markets?"

Question 13.

The National Utility Contractors Association suggested that the Clean Water Council's idea to establish a state water and wastewater trust fund should be reexamined. This trust fund concept would supplement financing provided by state revolving funds and would be financed by user fees. What is EPA's opinion regarding the creation of such a trust fund?

Answer. The EPA has not taken a position on the creation of a trust fund to supplement State Revolving Fund appropriations. We will consider it along with other proposals as part of the Administration's effort to identify options for investing in infrastructure.

THE FLANAGAN GROUP
INCORPORATED
1600 WILSON BOULEVARD, SUITE 200
ARLINGTON, VIRGINIA 22209
(703) 522-4334
FAX: (703) 522-6356

LEGISLATIVE/REGULATORY
PUBLIC AFFAIRS/GOVERNMENTAL
STRATEGIC PLANNING/INTERNATIONAL

August 11, 1994

The Honorable Robert A. Borski
United States House of Representatives
2161 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman:

It was a pleasure to appear before your Subcommittee on July 13th and to provide testimony concerning our Infrastructure Investment Commission report. May I compliment your staff for their work in this area. We had an opportunity for a briefing session with them prior to the hearing - their questions and interests were very impressive.

Most respectfully, may I salute your leadership in this area. Clearly, we must arrive at some new approaches in infrastructure financing. The country has to understand that we have reached the end of an era that began some forty years ago, in the early 50's, when the Federal government sponsored significant investment, via government funding, in our nation's infrastructure. Today, we need to look to new ways - and particularly new capital - to reinvigorate our infrastructure. It is certainly significant to witness, that during that same forty year period, the steady but impressive climb of our nation's financial assets within the control of our pension fund systems around the country.

Now to answer the additional committee questions per your request, indeed they are right on the mark.

1) What positive and negative feedback from the Federal, state, and local officials has the Commission received regarding the creation of a national infrastructure corporation?

We have given numerous speeches throughout the country; and have found officials at the various levels of government to be extremely interested. We have spoken with governors, we appeared at the National Conference of State Legislatures, and we have met with state transportation officials. Four years ago, some of our recommendations would have been viewed as somewhat heretical. At present, we think the policies laid out in ISTEA are starting to be noticed throughout the country and our recommendations, we believe, could easily be

incorporated, with significant state and local support, in the reauthorization process of ISTEA in 1995-1996. To my knowledge, no state official has criticized our recommendations. There is some concern, in the context of municipal bond/tax-exempt volume caps, that alternative financing methods with financing done through a taxable equivalent nature attracting private capital, might jeopardize the argument for increasing the federal subsidy on the tax-exempt side. However, that was not the Commission's concern, in terms of our mandate, and is more a matter for Congress to consider in terms of budgetary realities.

2) Your proposals for "project finance" generally require the imposition of user fees to generate a revenue stream that will cover repayment of debt. How do we persuade the American people to pay user fees when people feel they've already paid enough through their taxes?

As to the user fee basis for project finance, yes, the American people are concerned. Our studies showed a clear preference for paying a user fee if the service being rendered is clearly identifiable and the user fee is going exclusively for that service. The issue of credibility comes into play when the public feels the "tax increase" or the "user fee" is going into general revenues which has been the history of many of our tolling arrangement on bridges and turnpikes. Therefore, it must be made absolutely clear that the user fee is finite and is user friendly using high technology, such as electronic metering on toll roads. Once the project is financed, the tolls would either be eliminated or adjusted to reflect whatever the services being rendered require. For example, the covenant for the Dulles Greenway calls for the toll to finance the construction, maintenance, and operation of the facilities (the longterm financing is geared to amortization and maintenance). Any revenues received over and above those three parameters are destined for improvements in that transportation corridor through the life of the project and before the project reverts to the ownership of the state of Virginia.

3) Critics of the creation of a national infrastructure corporation claim that this organization will just add another layer of bureaucracy. What is your response?

Yes, the creation of a new government entity always suggests a new layer of bureaucracy. However, if we are going to, in fact, leverage the Federal dollar in order to accomplish more in private capital investment, we actually save in terms of total government employment by establishing an agency whose sole purpose is to be an administrator for a financing strategy to serve it's clients at the state revolving fund level. We have done everything possible to ensure that this was not a bureaucracy and, as said in my testimony, we would not want to create another HUD by inviting clients to come directly to Washington. Rather, we would keep the states as the arbitrator of the program with the infrastructure corporation being only a window for these Federal services to be disseminated accordingly to the client states. The old adage of a "stitch in time saves nine" is quite appropriate in this situation. Clearly, Congress could put a cap on the corporation's employment and budget. We would look at the Connie Lee analogy and how the corporation would, as with Connie Lee, be a quasi private entity providing these credit enhancements/development risks insurance tools to states

with a modest Federal investment of a minority interest equity nature supplemented by private capital investment.

4) You suggest that financing by the national infrastructure corporation would go through state revolving funds. Would state-controlled funds adequately serve the needs of bi-state and multi-state metropolitan areas, like Philadelphia and New York?

Your point about multi-state areas is certainly valid and we would encourage state revolving funds to be creative. The Congress should require states to have a regional revolving fund strategy wherever necessary. Frankly, we want the states to move ahead and leverage their own assets and certainly a regional approach would be welcomed.

5) What do you mean by "multiply the provisions in ISTEA having to do with subordinated debt"? Why is this important?

As to the provisions of ISTEA, having to do with subordinated debt, we have been told many times that projects that are close to financing often times need additional equity capital. Therefore, the provisions contained in ISTEA regarding subordinated debt are extremely popular. Granted, there has been little activity to date, but those who are knowledgeable in project finance readily agree that this is going to be a very important stimulus in getting project financing completed in the pre-construction time frame. Therefore, it seems logical to expand the program dollar wise if at all possible.

6) You suggested in your testimony that pension funds be drawn on more heavily for financing infrastructure. Won't it always be more expensive to project sponsors to finance infrastructure through taxable debt sold to pension funds than through tax-exempt debt sold to other investors?

As to the comparison of the expense of tax-exempt versus taxable debt - there are two different elements to be considered. As pointed out earlier, the question of the Federal subsidy for tax-exempt debt is a very significant one. As a result, Congress has shown an unwillingness to enlarge that subsidy which begs the question of how do we accomplish all of our infrastructure needs.

Secondly, can we afford to ignore that tremendous reservoir of capital contained in pension funds. They are not interested in tax-exempt securities because of their tax-exempt status. As to the projects and the costs thereof, they are financed over a long period of time - 30 to 40 years - that and the depreciation benefits for the developer bring the projects net costs to the sponsor to a par status with that of the tax-exempt financing.

A very important part of the taxable scenario is that we are inviting, for the first time, private capital investment. Accordingly, that brings specific disciplines, particularly in the due diligence area, offering project completion success ratios which mitigate the cost of the project. You would be very impressed with the incentives that can be brought into a project where private

capital is involved that bring disciplines to construction schedules. It is a very significant factor compared with the current infrastructure construction practices based on either grant programs or tax-exempt.

7) In your testimony you cite the infrastructure corporation recently established by the State of California. Have other states established such corporations, or are they considering it?

The state of California recently passed legislation. Unfortunately it has not been funded as of yet, nor does it include the credit enhancement disciplines we would suggest. Essentially, it is a revolving fund for public funds. It does not address the opportunities for inviting private capital investment. For this reason, we would recommend that, as a "carrot and stick approach", the Federal government require states to encourage private capital by establishing revolving funds with certain criteria in order to be cligible to receive the benefit of the Federally provided tools, i.e., development risk insurance and re-insurance of the user fee (credit enhancement).

8) Mr. Rohatyn proposed the creation of an Interstate Financing Corporation to help finance the nation's infrastructure needs. What is your response to his proposal?

With all due deference to Mr. Rohatyn and his many years of public service, in an earlier day when the U.S. Government's fiscal situation were more positive and an infusion of public funds to an interstate financing corporation would be feasible - I personally would applaud such a venture. However, I am skeptical that there would be funding available, that is public funds available, for such a public corporation activity. That is why we took the other task of suggesting modest Federal government investment in certain disciplines to create an aperture for private capital to flow into infrastructure as a new resource.

Over and over again, we have made the case that our recommendations are a part of the "growing of the pie". We are advocating that, for the first time, there be a serious effort to bring private capital into infrastructure. This has not been done before in terms of Federal policy. This is not privatization which is in my view, providing public funds to private venders but rather inviting private capital investment with all the risks attendant to such a venture. This in no way jeopardizes the continuation of grant programs and/or municipal bond financing. In fact, I do believe that they are compatible, particularly in the area of identifying a user fee. Most of our municipal bond financings today are either re-financings or revenue financed projects. The days of the general obligation seem to be disappearing. The more disciplines that can be put into the system to encourage entrepreneurs to develop new projects, the more opportunities there will be - based on a revenue based user fee base - to finance at either tax-exempt or taxable as the case may be.

10) How do we ensure that new financing methods will not simply target projects to those who can afford user fees and continue to neglect the infrastructure needs of those who cannot afford these user fees?

I would also like to remind the Committee of what I would call the Blanchard rule which essentially allows state governments by going through this process to more readily identify projects that can have a revenue stream; thereby, identifying grant monies that can be allocated to projects elsewhere, e.g. rural and urban areas, that would never be able to garner such a revenue stream. We call it the Blanchard rule, after now Ambassador, but former Governor of Michigan, Jim Blanchard who first mentioned this point. The needs of the rural and inner city urban areas will be more readily addressed if we're able to finance other infrastructure projects through a revenue based user fee approach. Otherwise, the politics of the status quo make it more difficult to do so.

11) Do you believe a separate capital budget would help the Federal government provide funding for infrastructure improvements?

The Infrastructure Investment Commission did not investigate nor was it asked to examine the capital budget approach. Therefore, as a Commission endeavor, I'm afraid we cannot comment directly on the subject of the desirability of a capital budget. My personal view is that the arguments for such are compelling and that the Congress, in preparing for what appears to be a major infrastructure initiative in this coming Congress, should look at it from an incremental point of view

In summary, we do look forward to working with the Committee as they address major infrastructure initiatives in this coming Congress. If there is anything that we can be doing to prepare for that, in terms of additional information, please do not hesitate to contact our office.

Sincerely,

Daniel V. Flanagan, Jr.

FELIX G. ROHATYN
ONE ROCKEFELLER PLAZA
NEW YORK, N.Y. 10020

September 6, 1994

The Honorable Robert A. Borski
Chairman
Subcommittee on Investigations and Oversight
Congress of the United States
House of Representatives
Room 2165, Rayburn House Office Building
Washington, D.C. 20515

Dear Chairman Borski:

The questions posed in your letter of August 2, with my responses, are as follows:

1. Given the inability to invest all of the funds collected for the highway trust fund and the aviation trust fund, why do you think Congress would be able to provide federal funding for an infrastructure bank?

I contend that all of the funds collected for the Highway Trust Fund (the Aviation Trust Fund I believe is similar) could be easily invested in urgently needed projects. Rather, the pace of investment is slowed, I suspect, by federally imposed constraints, such as encumbrance caps, pay-as-you-go financing limitations and the application of interim trust fund balances to federal deficits. Indeed, it is partially to avoid these impediments that I propose an off-budget, independent, debt-issuing infrastructure financing corporation ("IFC").

2. *The Infrastructure Commission has recommended the creation of a "national infrastructure corporation" to assist state and local governments with their infrastructure investments. What is your opinion of their proposal?*

The Infrastructure Commission urges, as I do, an expanded federal role in addressing the serious shortfall in infrastructure investment. To this end, both the Commission and I recommend that a national-level financing corporation be established to reduce the borrowing costs for infrastructure. However, I go further. I believe it will take more than interest rate savings to ramp up investment to needed levels--it will also take sizable subsidies. Otherwise, why didn't the huge drop in interest rates (both real and nominal) over the past several years, coupled with the recession-driven decrease in construction bids, stimulate a prodigious expansion of infrastructure investment?

The Honorable Robert A. Borski
September 6, 1994
Page 2

3. *How can we make sure that new funds induced by new financing techniques add to, rather than substitute for, existing financing sources?*

Your question addresses the central issue of how to mitigate the perverse side effects of a federal incentive. In this case, the generosity of the federal subsidy will most certainly add to existing financing sources resulting in a massive expansion of infrastructure construction, which is desired. Rather, the dangers here are that the federal incentives will work too well, inducing unnecessary or overbuilt projects, which is not desired.

To guard against these twin risks I would rely on counter- incentives to the maximum degree possible. Further, I'd minimize national-level enforcement (and bureaucracy) while vesting considerable remaining enforcement responsibility with the state and local participants. To this end, rather than an outright grant, the IFC financing could be structured as a forgivable no-interest loan. State and local participants would be required to establish and carry out a plan of maintenance sufficient to keep projects financed by the IFC in a state of good repair for their projected useful lives. In addition, the participants would covenant to pay annually into a renewal and replacement fund to be held in trust by the IFC an amount equalling some portion (say 10% - 20%) of annual depreciation.

At the end of a participating facility's projected useful life, assuming full compliance with the maintenance conditions and the covenant to fund a portion of depreciation, the IFC loan would be forgiven and the renewal and replacement payments would be redeemable with interest. This latter amount could be applied to project replacement (and might have to be if the IFC is to provide further financing). However, if the participant fails to live up to its agreements, the IFC could invoke a variety of enforcement remedies ranging from use of the renewal and replacement fund payments to pay for neglected or inadequate maintenance to calling the loan.

4. *How do we ensure that new financing methods will not simply target projects to those who can afford user fees and continue to neglect the infrastructure needs of those who cannot afford these user fees?*

My recommended financing approach would accommodate projects that are either not suitable as user-supported enterprises fees or are not affordable initially, as well as those that are. My answer to question 3 above indicates that there must be some limits as to what is considered not affordable. Obviously, there is no point in 100% IFC financing of a project (a possibility in some cases) if the local participant cannot assume responsibility for adequate maintenance and some portion of renewal and replacement.

The Honorable Robert A. Borski
September 6, 1994
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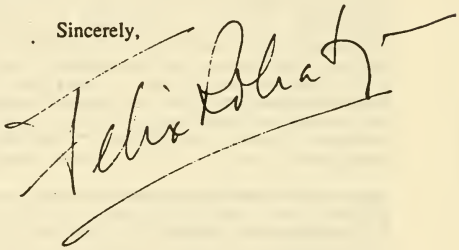
5. *What role do you believe the private sector should play in providing the financing for the nation's infrastructure problems?*

The basis of my proposal is that it will take federal leadership and federal subsidies to redress the deplorable deterioration of our infrastructure. Once the federal government demonstrates this leadership with a long-term commitment to infrastructure investment, the private sector will respond by providing efficient and reliable financing. This is the traditional role of the financial markets and there is nothing I would propose to improve on it.

I hope this answers your questions. Of course I would be happy to answer your further inquiries.

Sincerely,



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August 30, 1994

The Honorable Robert A. Borski
Chairman
House of Representatives Committee on Public Works
and Transportation
Subcommittee on Investigations and Oversight
586 Ford House Office Building
Washington, DC 20515

Dear Chairman Borski:

On behalf of the 170,000 member firms of the National Association of Home Builders, I want to thank you for the opportunity to respond to your written questions as a means of following up on our testimony before your subcommittee on July 13, 1994. I want to express my appreciation for the opportunity to testify before your subcommittee on innovative alternative financing techniques for infrastructure projects. The text which follows is a reiteration of the questions posed in your August 2, 1994 letter, followed by my response.

QUESTION 1:

In your testimony, you suggested creating a national infrastructure bank to help finance infrastructure projects. How does this differ from the Infrastructure Commission's proposal to create a national infrastructure corporation? What is your opinion of the Commission's proposal?

ANSWER:

The National Infrastructure Corportion (NIC), proposed by the Infrastructure Commission, and the National Infrastructure Bank, proposed by the National Asociation of Home Builders (NAHB), are basically similar in purpose and function. Both proposed enterprises are designed to reduce the cost of infrastructure finance by reducing the risk faced by bond holders through financial guarantees of timely payment of interest and repayment of principle, and both provide insurance against default especially during the pre-construction phase of a project. Furthermore, both entreprises would broaden the market for infrastructure securities by creating a secondary market.

However, there are major differences between the two enterprises which relate to the scope or perceived role envisioned by their respective proponents. The primary, and more narrow, focus of the NIC is credit enhancement and the provision of development risk insurance during the pre-construction phase of a project. The primary role of the NIB is the creation of a secondary market for state and local government tax-exempt securities. Second, proponents of the NIC would concentrate on infrastructure projects that have a dedicated revenue stream, mainly user fees and charges. The NIB would not necessarily give higher priority to user fee financed projects. Projects financed by the full faith and credit of the state, dedicated tax revenues, or obligated grants would be pooled to create a derivative security. Another important distinction between the NIC and the NIB would be the primary clientele or users. The primary user of the NIC would be state revolving funds. The primary clientele of the NIB would be state and local general governments and possibly private developers and builders.

As initially proposed, a National Infrastructure Coproration does not address the housing affordability issues associated with infrastructure finance. From the perspective of a home builder or developer, the NIC does not meet the need for reduced infrastructure financing costs. Communities now frequently require builders or developers to provide offsite public facilities (e.g. public school buildings, connecting streets and roads, recreation facilities, and police and fire stations). Traditionally, these facilities were financed through issuance of tax-exempt bonds and the bonds were paid off through property tax or other local revenues; they are extremely difficult to finance through user charges. Because the NIC would focus primarily on user-fee financed projects, projects for which home builders would be responsible, would not be given high priority. Therefore, private developers would continue to pay market rates of interest rather than the lower rates envisioned by the proponents of the NIC. (Private financing is more costly than tax-exempt financing.)

QUESTION 2:

Mr. Rohatyn of Lazard Freres and Company proposed the creation of an Interstate Financing Corporation to help finance infrastructure needs. What is your opinion of his proposal?

ANSWER:

Mr. Rohatyn's proposal for a federally created Interstate Financing Corportion (IFC) is structured as a temporary supplement to the existing state and local government infrastructure investment program. While any stimulus to public infrastructure development is welcome, this proposal falls short of the needs of the nation. NAHB seeks a permanent method to reduce the cost of infrastructure finance. Because his testimony was brief, Mr. Rohatyn's proposal raises additional questions. First, Mr. Rohatyn proposes raising the federal gasoline tax by 2 cents per gallon per year over a 5-year period. Irrespective of the political pitfalls of such a proposal, it is unclear whether he intends this tax increase to be permanent or temporary. Second, NAHB is unsure just who is eligible for IFC funding under Mr. Rohatyn's proposal.

QUESTION 3:

In your testimony, you said a "developer's up-front financing of the infrastructure through impact fees is more costly than the bond-financed public improvements." Do you have any data that would support this claim?

ANSWER:

The most dirct forms of private infrasturcture finance are locally imposed exactions on builders and developers to either direct construct and install infrastructure, to dedicate land for the construction of infrastructure, or, to pay impact fees to the locality. The builder or developer must borrow to finance land development, construction, and new capital facilities. The developers or builders will, to the extent possible, pass all costs forward to the ultimate buyer or backward to the landowners. As a result of the added costs of developer financed infrastructure, the ultimate purchaser must put up more cash for closing and borrow more to purchase the property.

Private financing of infrastructure is more costly than public financing because private borrowers almost invariably bear higher interest rates than public borrowers, especially if the public authority issues debt with interest that is exempt from federal (and possibly state) income taxes. For example, the short-term interest rate banks charge their best commercial customers, the prime rate, was 6.99% per year at the end of May 1994. Builders and developers usually pay "prime + 2," or 8.99%. In contrast 20 year notes of state and local governments were yielding 6.13% for week ending May 27. (Board of Governors of the Federal Reserve System, Federal Reserve Bulletin (August 1994, pp. A-25, A-26.)

If it is assumed that the impact fees, and the interest cost incurred to finance the fees initially paid by developers are passed onto homebuyers, then the ultimate burden of infrastructure finance is borne by the new residents. Because mortgage interest payments are deductible from federal, and possibly state, income taxes, the difference in effective interest rates paid by private borrowers and public borrowers is not as great as the difference in nominal interest rates. However, not all private borrowers can take full advantage of the mortgage interest deduction; itemized deductions for mortgage interest are of full value only if other tax deductions, including real estate property taxes, are at least equal to the standard deduction -- $6,350 for married couples filing joint returns and $3,800 for single individuals in 1994. (Commerce Clearing House, 1994 U.S. Master Tax Guide, p.87.)

QUESTION 4:

How do we ensure that innovative and alternative financing methods will not simply target projects to those who can afford user fees and continue to neglect the infrastructure needs of those who cannot afford these user fees?

ANSWER:

There is no reason to assume that innovative or alternative infrastructure financing methods would automatically favor user fee financing over the more traditional method of tax financing. In fact the converse is true --the financial markets generally favor state and local securities backed by the full faith and credit of the issuing jurisdiction over securities backed primarily by user fees. Because full faith and credit backed securities (general obligation, or GO bonds), are deemed to have lower risks of default, they carry lower interest rates than user fee backed securities (revenue or RO bonds).

The decision to issue GO bonds or RO bonds is made by individual state and local government units and is based, in part, by feasibility, and, in part, by efficiency[1] and other considerations. For example, it is extremely difficult to finance bonds for construction of local streets, public school buildings, and police and fire stations through user charges because it is quite costly to administer such a system, or it is politically unacceptable. Bonds for these purposes are generally backed by locally raised tax revenues (GO Bonds). Other projects such as non-local roads, bridges, and tunnels, sewer lines, airports, mass transit facilities and waste water treatment facilities can be financed by RO bonds. Because it is fairly easy to collect user fees for these purposes, and because of efficiency criteria, RO bond financing of these projects may be the most desirable.

If it is desired that issuers of state and local government bonds use tax-financed bonds rather than user fee-financed bonds, the federal income tax deductibility of interest from state and local bonds backed primarily by user fees could be limited. This action would raise the yields on these securities over the GO financed securities thereby inducing state and local governments to issue more GO backed securities. Further, limiting tax deductibility of the interest on RO backed securities would make these securities more attractive to pension funds and other tax-exempt institutions. However, this action would raise the cost of financing state and local governments and also raise constitutional issues.

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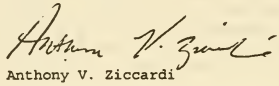
[1] Economic efficiency in the financing of infrastructure occurs when the cost of using a public facility is just equal to cost of producing the facility, and that public facilities should only be constructed when the benefits derived by members of the community exceeds the cost of production. In an ideal world, the capacity of public facilities will be expended up to the point where the cost of increasing the capacity to produce one more unit of service (marginal cost) is just equal to cost to the user for using an additional unit of service (price of the service). Efficient infrastructure finance would equate the cost of providing public services with private benefits.

Again, I hope these answers clarify the position of NAHB and assist you in your effort to develop solutions to infrastructure finance issues. I know that I, and the staff at NAHB, stand ready to asist you further should the need arise.

Sincerely,



Anthony V. Ziccardi
President, K. Hovnanian Of South Jersey
on behalf of the National Asociation of Home Builders

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October 20, 1994

The Honorable Robert A. Borski
United States House of Representatives
Washington, D.C. 20515

Dear Congressman Borski:

Thank you again for the opportunity to present testimony on the nation's infrastructure needs at the July 13 hearing. As requested, the American Road & Transportation Builders Association has prepared a response to the six follow-up questions in your letter of August 2.

<u>Response to Question No. 1</u>

Section 1012 of ISTEA provides a two-pronged financing system for financing toll roads. The first is through the direct infusion of capital of up to 80 percent of project cost matched by a state contribution in the amount of the balance. The second is through the optional loan program in paragraph seven of subsection (a).

On first impression, one would think that state departments of transportation would be lining up to take advantage of section 1012, particularly the optional loan program. This has not proven to be the case.

Part of the reason is that section 1012 as a whole represents a significant departure from the way states have traditionally financed and undertaken the development of highway projects. This initial reluctance by the states to fully embrace section 1012 may also be due to the fact that the program is voluntary and that key definitions and terms are not clearly defined.

It should be noted that the House has passed two technical corrections bills that would clarify the meaning of key section 1012 terms and requirements. These changes were also incorporated in the NHS bill. ARTBA fully supports these changes, which were developed with the Association's assistance.

In summary, ARTBA believes that the optional loan program has substantial potential as a financing vehicle and that a pilot project approach can be effectively used to show how it can be employed. Although the optional loan program has several attractive features, i.e., the revenue obtained from the repayment of loans and the subordination of debt, it apparently needs some further boosts.

Virginia
Maryland
North Carolina
New York
New Jersey
Connecticut
Massachusetts
Pennsylvania

Response to Question No. 2

Some projects are clearly not investment grade. For example, toll projects in areas with an insufficient flow of traffic would not yield an adequate return on capital. It is unlikely that the financing approaches evident in the loan program of section 1012 and others would be effective alternatives to the traditional user fee system. However, a program such as the one adopted by Washington seems to have certain built in safeguard--such as the runoff selection process for projects--that can be used to ensure that public-private financing is employed where it makes economic sense.

Response to Question No. 3

The repair and maintenance of roads and bridges can be accomplished with non-traditional funding. Pre-existing facilities have established traffic patterns which can be used to project income streams and generally do not require the same level of development phase expenditures. These factors standing alone suggest that public-private venture arrangements could be effective in undertaking maintenance work.

Response to Question No. 4

State departments of transportation can play an important role in this by controlling the project mix. For example, in cases of low traffic volume, a project may be made more financially attractive by adding in the development property adjacent to the proposed facility.

Response to Question Nos. 5, 6 and 7

ARTBA has not taken an official position, but its Public-Private Ventures in Transportation Division is reviewing the DeLauro bill and will taking up Mr. Rohatyn's proposal and H.R.3489 at its next meeting.

Yours truly,

William H. Allen
Principal

WHA:klp

NATIONAL UTILITY CONTRACTORS ASSOCIATION
4301 N. FAIRFAX DRIVE
SUITE 360
ARLINGTON, VIRGINIA 22203-1627
(703) 358-9300 FAX: (703) 358-9307

October 21, 1994

The Honorable Robert A. Borski
Chairman
Subcommittee on
Investigations and Oversight
Committee on Public Works and Transportation
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairman Borski:

On behalf of the National Utility Contractors Association (NUCA), I am pleased to respond to three of your follow-up questions to the July 13, 1994 hearing on the subject of our nation's infrastructure financing needs.

1. What problems would you foresee in establishing a water and wastewater trust fund?

Our written testimony states that Congress could authorize states to create new water and wastewater trust funds within a certain period of time that would be capitalized with nominal fees on water use or wastewater generation collected from users within their states. If states fail to create trusts, then the federal government would be authorized to create and operate trusts for them. A similar mandated financing arrangement was employed by Congress in the 1990 Clean Air Act.

One potential problem with this approach would occur if the states argued that this mandatory mechanism violates the tenth amendment to the U.S. Constitution. One possible solution to this problem would be to ask states to consider the adoption of state trusts, and then withhold federal SRF monies from those that fail to do so.

2. One critical need for our infrastructure is better maintenance of our existing infrastructure. How can innovative financing techniques help out with that problem?

You are absolutely correct that maintenance of our capitol assets is critical. Innovative financing techniques, such as privatization, can enhance the preservation of infrastructure by turning over plant operation to independent public or private operating groups whose directive will be long-term operation with defined goals of maintaining plants and improving operations.

3. What can be done to encourage the use of public-private partnerships?

A. Establish a procedure to clearly identify all costs associated with a municipality's operation of a facility including chemicals, fuels, labor, utilities, and vehicles and equipment. These costs are often covered by or shared with other municipal budgets.

B. Place private financing of these projects on an equal footing with public financing, i.e., tax free bonds.

C. Recognize the revenue to be earned by a municipality from the taxes that will be paid by the private owner.

D. Recognize the benefit to a municipality from not having to continue contributions to an employee pension fund.

E. Establish a procedure whereby all necessary employees will be transferred to private companies.

We will continue to study alternative financing techniques, and look forward to the Subcommittee's report and recommendations. We appreciate the opportunity to participate in this ongoing process.

Sincerely,

Richard L. Foster

Richard L. Foster
NUCA Region II Vice President

Responses to post hearing questions from Jane F. Garvey and Louise F. Stoll, U.S. Department of Transportation

Response to Innovative Finance Questions for the Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation

Question 1: How do we ensure that innovative and alternative financing methods will not simply target projects to those who can afford user fees and continue to neglect the infrastructure needs of those who cannot afford these user fees?

Response to Question 1.

Our experience to date with the submissions received from the States under the Federal Highway Administration's (FHWA) Innovative Financing (TE-045) program indicates that the proposals are very diverse. The program solicited the best of innovative ideas from the States and specifically did not limit or target innovative financing to projects supported by user fees such as tolls or motor-fuel taxes. Under the innovative financing program, FHWA is embracing a multiple financing strategy that includes conventional Federal-aid apportionments as well as attracting private capital to supplement State and Federal financing sources given fiscally constrained budgets for capital spending. These concepts are not mutually exclusive.

Specifically, innovative financing concepts accepted under TE-045 included attracting private capital for the State match, relying on a prospective maintenance of effort test for section 1044 toll credit match, letting States point to Federal income streams as a means of backing State bonds, establishing State revolving loan funds for project loans, flexible tapered matching, phased funding, right-of-way leasing, and public-private partnerships.

The FHWA recognizes that where user fees are used to finance a project either separately or in conjunction with more traditional financing sources, that type of project is more likely to be proposed in more densely populated areas of the States. It is in these areas where a user fee based facility is best able to compete with a congested facility that relies on traditional highway financing resources. We believe that the benefit to be derived from the multiple source financing model is that the traditional Federal or State share is significantly decreased as a percentage of the total cost of the project, resulting in accelerated project advancement and ultimately freeing the State to expend its traditional funding sources in other areas of the State or on other facilities that are perhaps less able to support user based financing. We also believe that the States working in conjunction with the metropolitan planning organizations are in the best position to ensure that infrastructure needs are not neglected in those areas that are less able to attract private capital. These less populated areas of the States are likely to benefit now (by freeing up traditional funding sources) and in the future from many of the above innovative financing techniques being tested by FHWA that do not rely on user fees.

In addition, as noted by Deputy Federal Transit Administrator Grace Crunican in her testimony before this Committee on ISTEA Funding Flexibility on October 6, 1994, the Federal Transit

Administration (FTA) published a Federal Register Notice soliciting innovative financing proposals to assist FTA grant recipients in stretching Federal resources. We believe that the Department's multi-modal approach to innovative financing is inclusive and is supportive of the infrastructure needs of the public, including those that are economically less advantaged.

Question 2: Can you elaborate on the public-private activities proposed by the States? Can you also cite specific projects where these partnerships may be established?

Response to Question 2.

Many States submitted proposals requesting that the State be given credit for the state match if a private entity came forward with private funds for a particular project. This type of partnering was prevalent in many of the Transportation Enhancement innovative financing proposals received from Pennsylvania. In New York, a revolving loan fund to be repaid through a 23 U.S.C. section 129 loan agreement is being used in conjunction with testing IVHS technology. In Michigan, FHWA is permitting the State to credit private matching funds toward the State's share of project costs in the construction of a new interchange near a large metropolitan airport. In Ohio, an intermodal truck-rail interchange will be user fee financed through the use of a 23 U.S.C. section 129 loan of CMAQ funds; and in Texas an international bridge will be financed by establishing a revolving fund, use of donated right-of-way and through a section 129 loan. Montana has sought to construct a

corridor in a major metropolitan area through a combination of deferred matching, a section 129 loan and a State revolving fund. Finally, an Arizona project will seek to lease Interstate right-of-way for private communication lines in conjunction with a freeway management communication system. Finally, a major public-private partnership is underway in Washington State. Results and the role of Federal funds will be available in the near future.

Question 3: The Infrastructure Commission has recommended the creation of a "national infrastructure corporation" to assist State and local governments with their infrastructure investments. What is your opinion about establishing such a corporation?

Response to Question 3.

The FHWA supports the goal of increased investment in infrastructure; the return received on that investment--its greater access to economic markets, safer and more user-friendly travel, time savings and the resulting economic benefits are substantial and should not be ignored. Nevertheless, if the purpose of a national infrastructure corporation is simply to serve as a catalyst for innovative financing, we believe that FHWA has and will continue to work effectively with Congress and the States to find ways to innovatively finance transportation infrastructure. Funding equity issues for the States that do not receive a portion of the infrastructure funds would be raised and hotly contested by those States.

Questions 4 & 5: The American Road and Transportation Builders Association has proposed the creation of a separate pool of funds to finance projects that use innovative finance techniques, in order to provide an incentive for State and local governments and private interests to use innovative financing. What is your opinion regarding this proposal?

Mr. Rohatyn of Lazard Feres and Company proposed the creation of an Interstate Financing Corporation to help finance the nation's infrastructure needs. What is your response to his proposal?

Response to Questions 4 & 5.

At their heart, both proposals recognize the nation's reliance on infrastructure and the economic benefits that would accrue by addressing well documented needs. These initiatives are complex and require substantial analysis by the Department and OMB to comprehensively respond to these proposals. Briefly, Mr. Rohatyn's Infrastructure Financing Corporation would provide for a $200 billion, 10-year infrastructure investment program to be financed by guaranteed Federal bond sales, State matching funds, and pay-as-you go Federal gasoline taxes. The program would be off-budget and significant public debate would be needed before embarking on this departure from unified budget concepts.

The proposal for an Infrastructure Financing Corporation is very broad, and more specificity would be needed on very important issues such as program nature, eligibilities, and distribution mechanisms to the States. While the size of the program would begin to address transportation and other infrastructure challenges, several important financing issues would have to be addressed. These include:

Tax Increase - The willingness of the motoring public to pay a 10 cent per gallon gas tax increase to finance non-transportation improvements is very questionable. While the public has shown a willingness to pay increased State and local highway user taxes to pay for transportation projects, an increase to finance other infrastructure projects and service may be less acceptable.

Debt Service - The debt service would significantly exceed the size of the program. Arguments of "pay-as-you go" financing versus bond financing would have to be carefully considered.

Off-Budget - The proposal for "off-budget" financing would have to be carefully considered. Under the current concept of a unified Federal budget, Federal outlays, including those for highway and other infrastructure programs, are considered as part of aggregate Federal spending. This total picture of Federal spending is needed to consider the Federal deficit as well as other economic measures connected to the Federal spending.

Question 6: In November of last year, I introduced the Infrastructure Reinvestment and Economic Revitalization Act of 1993, H.R. 3489, to create a new off-budget financing mechanism to provide a more immediate source of money to finance surface transportation infrastructure needs. Will this type of mechanism help meet our infrastructure needs?

Response to Question 6.

The Infrastructure Reinvestment Fund, which would be established under H.R. 3489 would help provide a more immediate source of

funds to meet transportation infrastructure needs. Like the proposals discussed above, H.R. 3489 addresses the need for infrastructure investment and recognizes the benefits that would accrue as a result of such investment. Without a separate source of funding for H.R. 3489 projects, however, very little additional investment will be realized.

We would welcome a continuing dialogue on these and other elements of your proposal so that the benefits of innovative infrastructure financing can be realized. At the same time, FHWA believes that numerous opportunities exist within ISTEA and should be further exploited by our State partners. We hope to work with you and the Subcommittee on these prospects for the future of surface transportation.

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